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AGE, SEX, AND SIZE OF YUKON RIVER SALMON CATCH AND
ESCAPEMENT, 1984

By:
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and
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July 1985

ALASKA DEPARTMENT OF FISH AND GAME
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Commissioner

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Anchorage, Alaska

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ABSTRACT

Commercial and subsistence harvest of chinook salmon (*Oncorhynchus tshawytscha* Walbaum), summer and fall chum (*O. keta* Walbaum), and coho salmon (*O. kisutch* Walbaum) for the Yukon River in 1984 are presented by age, sex, fishing district, and gear type. Samples are stratified by time period where possible and temporal trends in age and sex composition are discussed. Peak aerial survey salmon escapement counts, side-scan sonar, foot survey, and fishpass counts are presented for all salmon escapements enumerated in the Yukon River drainage in 1984. Age, sex, and size composition is presented for those escapements that were sampled. This report includes all Yukon River salmon age-sex-size data collected in 1984. Those samples not used to apportion catches or escapements are summarized in appendices.

KEY WORDS: Yukon River, chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), fishery synopsis, age classification.

INTRODUCTION

The Yukon River drainage supports major runs of chinook salmon (*Oncorhynchus tshawytscha* Walbaum), summer and fall chum salmon (*O. keta* Walbaum), and coho salmon (*O. kisutch* Walbaum). These species contribute to commercial and subsistence fisheries throughout the Yukon River drainage. Pink salmon (*O. gorbuscha* Walbaum) and sockeye salmon (*O. nerka* Walbaum) are also indigenous to the Yukon River drainage. Pink salmon returns are stronger in even-numbered years, while sockeye salmon are only rarely documented, and neither species is harvested by commercial or subsistence fishermen to any extent.

Most commercial fishing occurs in the lower 230 km (200 mi) of the river, where the harvest consists of mixed species and stocks of salmon bound for spawning areas throughout the Yukon River drainage. Resource management agencies, primarily the Alaska Department of Fish and Game (ADF&G) and the Department of Fisheries and Oceans, Canada (DFO), conduct a variety of programs that supply information used to manage and document the fisheries. These programs include: (1) documentation of catch in each fishery; (2) catch sampling for age, sex, and size data; (3) assessing the magnitude of spawning escapements by aerial and ground surveys, hydroacoustic counters, and visually through a fishpass; and (4) sampling major spawning escapements for age, sex, and size data. In some cases, escapements are estimated by hydroacoustic counts.

Basic fishery statistics for Yukon River salmon are presented in several sources. Commercial and subsistence harvest data and escapement estimates are presented in the Yukon River Annual Management Report (1985). Historical escapement data are compiled in a computerized data base by Barton (1984). Detailed analysis of escapement sonar count data for the 1984 season is presented by Buklis (1984) for the Anvik and Andreafsky Rivers and by Barton (1985) for the Sheenjek River. Age, sex, and size summaries before 1982 were annually reported in the ADF&G Arctic-Yukon-Kuskokwim Region Age, Sex, and Size Composition of Salmon report series. Beginning with the 1982 season, age, sex, and size of Yukon River salmon has been presented in the series of which this report is the third edition. The previous reports were prepared by McBride, Hamner, and Buklis (1983), and by Buklis and Wilcock (1984).

This report presents commercial and subsistence salmon harvest, and enumerated spawning escapements, in number of fish by age and sex. Indices of relative abundance and age and sex summaries are presented for the major spawning escapements. Length is reported by age and sex for each sampled fishery and escapement. No attempt has been made in this report to identify the origin of fish in mixed stock fisheries or to estimate the contribution of any spawning escapement to a fishery. It is hoped that this report will serve as an initial data base for further investigation of these parameters.

METHODS

Study Area Description

The Yukon Area includes all waters of the Yukon River and its tributary streams in Alaska (Figure 1) and the Yukon Territory (Figure 2), and all coastal waters from Canal Point light near Cape Stephens southward to the Naskonat Peninsula. The Alaska portion of the river is divided into six fishing districts as follows: Districts 1, 2, and 3 in the lower Yukon Area; and Districts 4, 5, and 6 in the upper Yukon Area. Commercial fishing occurs throughout the main Yukon River and in the lower 360 km (225 mi) of the Tanana River, however, most of the commercial harvest is taken in Districts 1 and 2. Set and drift gill nets are the legal gear in the lower Yukon, and set gill nets and fishwheels in the upper Yukon. Chinook and fall chum salmon are also commercially harvested in a gillnet fishery near Dawson City, Yukon Territory. Subsistence fishing is allowed throughout the drainage, although most of the effort is concentrated in the main Yukon River. The Annual Management Report (1985) provides a complete description of the Yukon River area and its fisheries.

Abundance of Catch and Escapement

Alaskan commercial catch data presented in this report were compiled by the Division of Commercial Fisheries for each management district and are based on computer tabulations of individual harvest receipts (fish tickets). Subsistence catch data were tabulated from personal interviews of subsistence fishermen in selected villages and from mail-in questionnaires. Gear types used to harvest salmon in the subsistence fishery are not accurately documented for the upper Yukon Area, where both gill nets and fishwheels are used. Subsistence catches in Districts 4, 5, and 6 are apportioned by gear type based on subjective estimates (P.C. Fred Andersen, upper Yukon Area Management Biologist, Division of Commercial Fisheries, ADF&G) due to lack of adequate gear survey information. All Yukon Territory catch data were obtained from the Department of Fisheries and Oceans.

Most escapement data are peak aerial survey estimates for selected spawning streams. An effort is made to survey the major spawning populations and these indices are taken to represent overall trends in escapement. Total season escapement for the following three spawning populations was estimated by side-scan sonar: (1) East Fork Andreafsky River summer chum salmon, (2) Anvik River summer chum salmon, and (3) Sheenjok River fall chum salmon. Chinook salmon passing the Whitehorse Dam in the Yukon Territory, Canada are visually counted through a fishpass.

Age, Sex, and Length

Salmon were sampled for scales, sex, and length. Examination of scale samples provide age information for salmon in the catch and escapement. Scales were taken from the left side of the fish approximately two rows above the lateral line and on the diagonal row downward from the posterior insertion of the dorsal fin (INPFC 1963). Scales were mounted on gum cards and permanent impressions made in cellulose acetate (Clutter and Whitesel 1956). Ages are

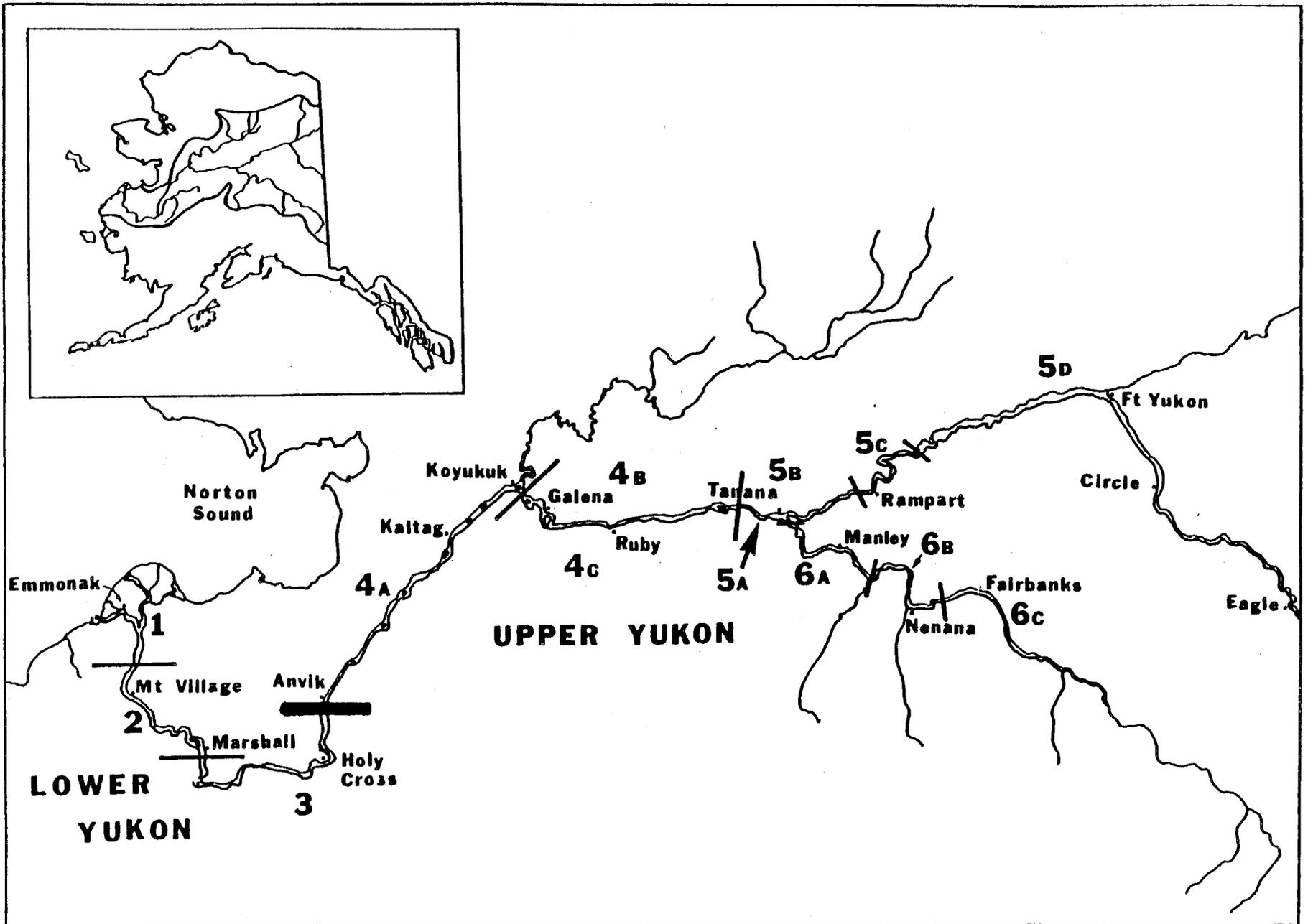


Figure 1. Map of the Alaska portion of the Yukon River, showing fishing district boundaries.

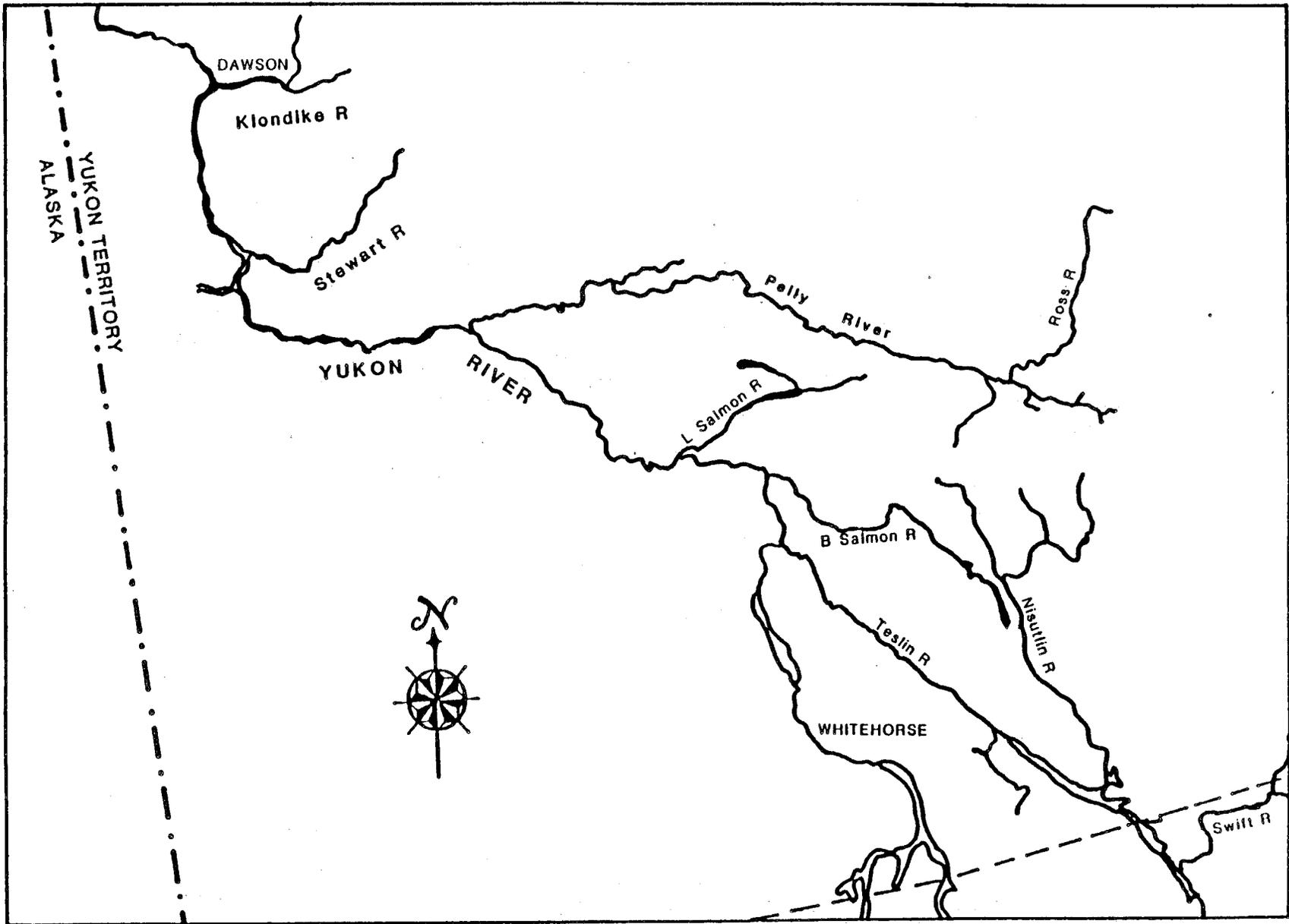


Figure 2. Map of the Canadian portion of the Yukon River.

reported in Gilbert-Rich¹ notations. Sex determination was based on examination of either external morphological features or gonads.

An attempt was made to sample fish from the commercial catch for each gear type in each district. However, because of logistic considerations involved in sampling such a widely dispersed fishery, many of the smaller harvests were not sampled. The majority of the commercial catch samples were collected in District 1 and 2. Subsistence catches were generally not sampled. Subsistence harvests were apportioned by age and sex for a given district and gear type based on commercial catch samples taken by that gear type in the same or, in some cases, a neighboring district. An attempt was made to sample the major chinook and chum salmon spawning populations. Most escapement data were collected from carcasses, although live salmon were captured by beach seine at the East Fork Andreafsky, Anvik, and Sheenjok Rivers.

Age and sex composition was estimated for each sampled fishery with a stratified systematic sampling design (Cochran 1977). Strata were defined as weekly periods (generally two fishing periods per week) for District 1 and 2 chinook salmon, and for District 1 summer chum, fall chum and coho salmon, during that portion of the season when the majority of the harvest was taken. For the other districts and fisheries, time strata were of variable length depending on the number of samples collected. An attempt was made to sample a sufficient number of fish within a strata to simultaneously estimate the true proportion of each major age class in the catch within ± 5 percentage points 90% of the time.

Age compositions and associated variances were estimated with procedures outlined by Cochran (1977) for stratified sampling programs:

$$C_{tj} = C_t P_{tj} \quad V [C_{tj}] = (C_t)^2 \left(\frac{P_{tj}(P_{tj}-1)}{N_t-1} \right)$$

$$C_{.j} = \sum_{t=1}^T C_{tj} \quad V [C_{.j}] = \sum_{t=1}^T V [C_{tj}]$$

Where:

- C_t = Number of fish caught in stratum t ,
- P_{tj} = Fraction of sample in stratum t of age j ,
- N_t = Number of samples during stratum t ,
- C_{tj} = Estimated number of fish of age j during stratum t ,

¹ Gilbert-Rich formula: The first digit refers to the total age of the fish. The second digit, usually subscripted, refers to the number of years of freshwater residence. Marine age is the difference between these two.

T = Total number of strata,

C_{.j} = Estimated number of fish of age j for the season T.

If there were insufficient samples to attain the above levels of precision and accuracy, the samples were pooled into a single sample period for that fishery or escapement. Catch or escapement was then apportioned by age and sex. For those escapement samples with only aerial survey indices of abundance, sample data are presented, but indices of abundance are not apportioned by age and sex.

Lengths were measured from mid-orbit to fork of tail in millimeters. Average length, by sex and age, is reported for each sampled fishery and escapement. Length samples are not stratified by sample period.

RESULTS

Commercial and Subsistence Harvest

Commercial harvest (Alaska and Canada combined) totaled 129,789 chinook, 755,821 summer chum, 233,491 fall chum, and 81,940 coho salmon in 1984 (Table 1). The chinook salmon harvest was 19% below that of 1983, summer chum salmon 16% below, fall chum salmon 30% below, and the record coho salmon harvest was 6 times greater than the 1983 level. The chinook and chum salmon (summer and fall combined) harvests in the Alaska portion of the drainage in 1984 were 16% and 29% below the previous 5-year (1979-1983) averages, respectively, while the coho salmon harvest was more than triple the recent 5-year average. Fishermen in the Alaska portion of the drainage received an estimated \$5,686,000 for their catch, down 25% from the previous 5-year average. The largest commercial harvests of chinook, summer chum, and fall chum salmon occurred in District 1, while District 2 accounted for the largest coho salmon commercial harvest. Gill nets accounted for the majority of the harvest for each species. Commercial harvest and catch per unit effort by species and fishing period is presented for each district in Appendix Tables 1-7.

Subsistence harvest (Alaska and Canada combined) totaled 48,549 chinook, 230,565 summer chum, 180,894 fall chum, and 49,436 coho salmon in 1984 (Table 2). The chinook salmon harvest was 12% below that of 1983, summer chum salmon 4% below, fall chum salmon 8% below, and the record coho salmon harvest was more than double the 1983 level. The chinook salmon harvest was the third highest on record, exceeded only in 1980 and 1983. The largest chinook, fall chum, and coho salmon subsistence harvests occurred in District 5, while the largest summer chum salmon subsistence harvest occurred in District 4. Fishwheels accounted for the majority of the summer chum, fall chum, and coho salmon subsistence harvests, while the majority of the chinook salmon were taken by gillnet.

Escapement Abundance

Escapement objectives have been established for the major spawning populations

Table 1. Yukon River salmon commercial catch by district, species, and gear type, 1984.

District	Chinook			Summer Chum ¹			Fall Chum ¹			Coho		
	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total
1	74,671	-	74,671	292,676	-	292,676	78,751	-	78,751	29,472	-	29,472
2	36,697	-	36,697	236,931	-	236,931	70,803	-	70,803	43,064	-	43,064
3	3,039	-	3,039	1,087	-	1,087	6,429	-	6,429	621	-	621
4A	0	2	2	32,539	116,031	148,570	0	0	0	0	0	0
4B	224	48	272	862	14,981	15,843	2,130	2,053	4,183	73	339	412
4C	666	21	687	640	2,798	3,438	921	4,736	5,657	465	218	683
4 Total	890	71	961	34,041	133,810	167,851	3,051	6,789	9,840	538	557	1,095
5A	25	103	128	50	0	50	0	1,415	1,415	0	0	0
5B	990	599	1,589	168	457	625	2,121	8,208	10,329	0	0	0
5C	883	685	1,568	12	0	12	2,663	6,740	9,403	0	0	0
5D	384	0	384	5	0	5	106	2,864	2,970	0	0	0
5 Total	2,282	1,387	3,669	235	457	692	4,890	19,227	24,117	0	0	0
6A	0	0	0	1,235	2,534	3,769	0	5,617	5,617	0	1,608	1,608
6B	94	281	375	6,064	36,319	42,383	302	11,507	11,809	187	5,173	5,360
6C	119	373	492	1,839	8,593	10,432	338	2,856	3,194	79	641	720
6 Total	213	654	867	9,138	47,446	56,584	640	19,980	20,620	266	7,422	7,688
Alaska Total	117,792	2,112	119,904	574,108	181,713	755,821	164,564	45,996	210,560	73,961	7,979	81,940
Canada	9,885	0	9,885				22,931	0	22,931			
Total	127,677	2,112	129,789	574,108	181,713	755,821	187,495	45,996	233,491	73,961	7,979	81,940

¹ Includes "equivalent salmon" converted from roe sales in Districts 4, 5, and 6. Conversion factor of one pound roe equal to one chum salmon was used.

Table 2. Yukon River salmon subsistence catch by district, species, and gear type, 1984.

District	Chinook			Summer Chum ¹			Fall Chum ²			Coho ³		
	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total
1	4,624	-	4,624	28,459	-	28,459	8,885	-	8,885	6,095	-	6,095
2	7,172	-	7,172	26,996	-	26,996	11,394	-	11,394	7,066	-	7,066
3	4,355	-	4,355	7,169	-	7,169	2,074	-	2,074	656	-	656
4	4	4	7,650	16,945	96,020	112,965	3,115	28,037	31,152	287	2,580	2,867
5	9,293 ⁵	5,696 ⁵	14,989	3,153	28,382	31,535	9,843	88,590	98,433	1,747	15,720	17,467
6	900 ⁶	2,699 ⁶	3,599	4,688	18,753	23,441	2,273	20,453	22,726	1,479	13,306	14,785
Alaska Total	26,344 ⁷	8,395 ⁷	42,389	87,410	143,155	230,565	37,584	137,080	174,664	17,330	31,606	48,936
Canada	6,160	0	6,160				6,230	0	6,230	500	0	500
Total	32,504 ⁷	8,395 ⁷	48,549	87,410	143,155	230,565	43,814	137,080	180,894	17,830	31,606	49,436

- ¹ Subsistence catch is not known by gear type, but a subjective estimate is that fishwheels account for 85% of the District 4 summer chum salmon subsistence catch, 90% of the District 5 catch, and 80% of the District 6 catch.
- ² Subsistence catch is not known by gear type, but a subjective estimate is that fishwheels account for 90% of the fall chum salmon subsistence catch in Districts 4, 5, and 6.
- ³ Subsistence catch is not known by gear type, but a subjective estimate is that fishwheels account for 90% of the coho salmon subsistence catch in Districts 4, 5, and 6.
- ⁴ Harvest by gear type is not known for the subsistence chinook salmon fishery in District 4. Gear composition for the commercial fishery is not thought to be representative of the gear composition of the subsistence fishery. Commercial harvest was only 961 chinook salmon.
- ⁵ Subsistence catch apportioned by gear type based on the gear composition of the commercial fishery: 62% gillnet and 38% fishwheel.
- ⁶ Subsistence catch apportioned by gear type based on the gear composition of the commercial fishery: 25% and 75% fishwheel.
- ⁷ Does not include District 4 catch, which has not been apportioned by gear type.

of chinook, summer chum, and fall chum salmon for which a sufficient data base exists (ADF&G 1985). These escapement objectives are in most cases based on historical aerial survey indices of abundance, and should be considered preliminary assessments of optimal escapement levels.

Chinook salmon spawn in tributary streams throughout the Yukon River drainage (Figure 3). Aerial surveys of both chinook and summer chum salmon escapements in 1984 were limited in the middle portion of the drainage due to inclement weather and/or high water conditions. Escapement indices in the lower portion of the drainage numbered 2,473 chinook salmon in the East Fork Andreafsky River (apportioned sonar counts), 1,933 in the West Fork Andreafsky River, and 641 in the Anvik River (Table 3), meeting desired escapement objectives. The Chena and Salcha Rivers in the middle portion of the drainage were surveyed past the peak of spawning due to poor weather and water conditions. Counts of 501 and 1,031 chinook salmon, respectively, fell about 500 fish short of the escapement objectives for each of these streams. Yukon Territory chinook salmon escapements overall were slightly better than occurred in 1983, but about average compared to the historical data base. Escapements to the Pelly and upper Teslin Rivers were weak, while they were strong to the Nisutlin and Big Salmon Rivers. A total of 1,042 chinook salmon were counted at the Whitehorse fishpass (Appendix Table 8), with 65 fish sacrificed for a hatchery egg-take operation.

Summer chum salmon spawn primarily in streams tributary to the lower Yukon, the Koyukuk, and the Tanana Rivers (Figure 4). Escapements of 891,028 and 70,125 summer chum salmon were estimated by side-scan sonar in the Anvik and East Fork Andreafsky River, respectively, while 238,565 fish were counted in the West Fork Andreafsky River by aerial survey. The Anvik and West Fork Andreafsky River escapements were almost double their respective objectives, while the East Fork Andreafsky River escapement were the lowest documented by sonar since the project was initiated in 1981. A strong pink salmon escapement to the Andreafsky River affected the accuracy of both aerial survey and sonar estimation of summer chum salmon escapement. Escapements to the Koyukuk and Tanana River tributaries appeared to be good based on limited aerial survey data. The Salcha River aerial survey count of 9,810 summer chum salmon is the largest on record for this stream.

Fall chum salmon spawn in spring-fed upwelling areas in streams and sloughs in the upper portion of the Yukon River drainage (Figure 5). Escapement to the Sheenjek River was estimated by side-scan sonar to be 25,120 fall chum salmon, and 5,570 fall chum salmon were estimated by aerial survey in the Fishing Branch River. Both of these Porcupine River drainage escapements are well below escapement objectives and continue the trend of poor spawning levels documented over the past several years (Buklis and Barton 1984). The Sheenjek River count was the lowest since sonar operations began in 1981, and the Fishing Branch River count was the lowest observed since the early 1970's. Escapements were below average in both the Kluane (7,200) and main Yukon River between Ft. Selkirk and Carmacks (2,800) in the Canadian portion of the upper Yukon River. Escapements to spawning areas in the upper Tanana River totaled 20,269 fall chum salmon, which is similar to that of recent years, and the objective was met for the Delta River. However, escapement to the Toklat River in the lower Tanana drainage continued the recent trend of poor escapements, with only 15,861 fall chum salmon enumerated in 1984.

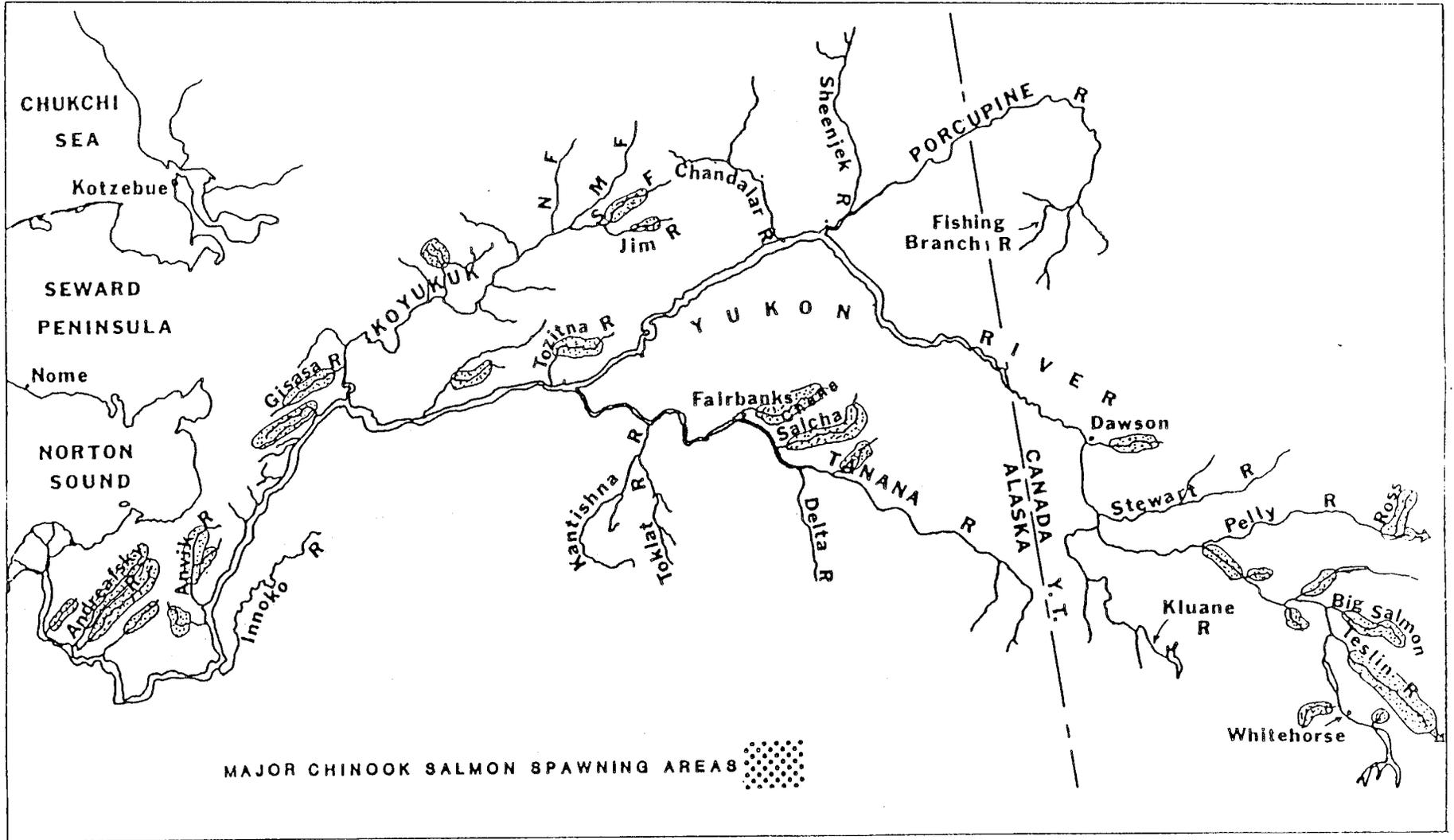


Figure 3. Chinook salmon spawning areas in the Yukon River drainage.

Table 3. Aerial survey salmon escapement estimates, Yukon River drainage, 1984¹.

Stream (drainage)	Date	Survey rating	Chinook	Coho	Summer chum	Fall chum
Andreafsky River						
East Fork sonar count ²	6/22-7/25		2,473	-	70,125	-
East Fork	7/13	poor	(1,573)	-	(95,200)	-
West Fork	7/13	good	1,933	-	238,565	-
Subtotal			<u>4,466</u>	-	<u>308,690</u>	-
Anvik River						
Aerial	7/17	poor	641	-	-	-
Sonar ²	6/22-7/27		-	-	891,028	-
Subtotal			<u>641</u>	-	<u>891,028</u>	-
Atchuelinguk River						
	7/14	fair	280	-	31,605	-
Stuyahok River						
	7/17	poor	few	-	few	-
Koyukuk River Drainage						
Huslia River						
North Fork ³	7/23	fair	-	-	2	-
Billy Hawk Creek ³	7/23	fair	-	-	4,500	-
Subtotal					<u>4,502</u>	-
Hogatza River						
Caribou Creek						
Bear Creek ⁴	7/18	fair	-	-	184	-
Henshaw Creek						
	7/30	poor	253	-	532	-
South Fork Koyukuk						
Fish Creek	7/30	poor	23	-	4	-
	7/30	poor	6	-	-	-
Jim River	7/30	poor	85	-	311	-
Subtotal			<u>114</u>	-	<u>315</u>	-
TOTAL Koyukuk R. Drainage			367		5,533	
LOWER Tanana River Drainage						
Kantishna River Drainage						
Toklat River						
Barton Creek	8/8	poor	30	-	-	-
Geiger Creek	10/28	fair	-	20	-	3,000
Sushana River ⁵	10/27	good	-	185	-	5,960
Toklat-vic. Rdhse ⁵	10/27	good	-	15	-	6,901
Toklat subtotal			<u>30</u>	<u>220</u>	-	<u>15,861</u>
Clear Creek						
	8/8	fair	48	-	-	-
Nenana River Drainage						
Lost Slough						
	10/17	good	-	2,677	-	-
Julius Creek						
Clear Creek ^{6,7}	9/21	fair	-	2,600	-	100
Wood Creek Weir ^{7,8}			-	8,805	-	2,126
June Creek ^{5,7}	9/28	good	-	55	-	-
Panguingue Creek ^{5,7}	9/28	good	-	26	-	-
Nenana Subtotal				<u>14,163</u>	-	<u>2,226</u>

-Continued-

Table 1. Aerial survey salmon escapement estimates, Yukon River drainage, 1984¹
(continued).

Stream (drainage)	Date	Survey rating	Chinook	Coho	Summer chum	Fall chum
Chatanika River	8/15	poor	9	-	70	-
Chena River	8/7	fair	501	-	1,861	-
Salcha River	8/7	good	1,031	-	9,810	-
UPPER Tanana River Drainage						
Slough near Eielson AFB	10/30	poor	-	-	-	2
Slough near BM 735 Slough	10/30	poor	-	-	-	91
Slough near mouth of Little Delta River	10/30	poor	-	-	-	7
Richardson Clearwater R. Between Andersen Slough and Delta River	10/30	fair-poor	-	428	-	-
Delta River ⁸	11/15	good-poor	-	7	-	222
South Bank Tanana	10/30	fair	-	-	-	12,327
Blue Creek	10/30	fair	-	31	-	2,150
Bluff Cabin Slough ⁵	11/7	good	-	110	-	42
Clearwater Lake Outlet Slough	10/30	poor	-	-	-	4,017
Clearwater Lake and outlet	10/30	fair	-	1,368	-	851
Delta Clearwater River ^{6, 9}	11/5-6	fair	-	11,061	-	-
One mile Slough	10/30	poor	-	170	-	560
Goodpaster River	8/8	good	165	-	189	-
Subtotal			165	13,147	189	20,269
TOTAL TANANA RIVER DRAINAGE			1,784	27,530	11,930	38,356
Porcupine River Drainage						
Sheenjek River ¹⁰	9/20	good	-	3	-	(11,402)
Sonar count ⁵	8/30-9/25		-	-	-	25,120
Fishing Branch ¹¹	10/16	fair	-	-	-	5,570
Porcupine Subtotal				3		30,690
Yukon Territory Streams						
Kluane River ¹¹	10/17	good	-	-	-	7,200
Tincup Creek	8/19	good	125	-	-	-
Koidern River ¹¹	10/17	good	-	-	-	1,300
Mainstem Yukon ^{11, 12}	10/12	good	-	-	-	2,800
Tatchun Creek ¹¹	8/31	-	161	-	-	-
Little Salmon River	8/18	good	434	-	-	-
Big Salmon River	8/15-19	fair	1,456	-	-	-
Teslin River Drainage						
Swift River (Lower Teslin River)	8/14	poor	3	-	-	-
Nisutlin River	8/18	good-fair	1,347	-	-	-
Wolf River	8/16	good-fair	374	-	-	-
Morley River	8/16	fair	93	-	-	-
Swift River	8/16	good	62	-	-	-
Jennings River	8/16	fair	29	-	-	-
Gladys River	8/16	poor	0	-	-	-
Upper Teslin River	8/16	fair-poor	86	-	-	-
Whitehorse Fishway ^{11, 13}	8/1-30		977	-	-	-

-Continued-

Table 3. Aerial survey salmon escapement estimates, Yukon River drainage, 1984¹
(continued).

Stream (drainage)	Date	Survey rating	Chinook	Coho	Summer chum	Fall chum
Pelly River Drainage						
Lapie River	8/17	good	5	-	-	-
Ross River	8/17	fair-poor	89	-	-	-
Prevost River	8/17	good-fair	0	-	-	-
Lewis Lake outlet	8/17	fair-poor	62	-	-	-
Lower Pelly Lake outlet	8/17	fair	24	-	-	-
Hoole River	8/17	good	58	-	-	-
Subtotal			5,385	-	-	11,300
YUKON RIVER DRAINAGE TOTALS			12,923	27,533	1,248,786	80,346

- ¹ Only peak estimates listed; carcass counts included. Data in parentheses not included in subtotals.
- ² Side-scan sonar estimate.
- ³ Surveyed by USFWS.
- ⁴ Combination foot and aerial estimate.
- ⁵ Foot survey.
- ⁶ Boat survey.
- ⁷ Surveyed by F.R.E.D. Division.
- ⁸ Weir count by F.R.E.D. Division. No chums allowed to spawn wild. Only 6,018 coho (2,835 males; 3,183 females) were passed and allowed to spawn wild. Remainder (2,787) went for Clear hatchery egg-take.
- ⁹ Surveyed by Sport Fish Division.
- ¹⁰ Incomplete survey - minimal estimates.
- ¹¹ Surveyed by Department of Fisheries and Oceans (Canadians).
- ¹² Mainstem Yukon River from Yukon Crossing to Fort Selkirk.
- ¹³ An additional 65 kings were utilized in egg-take operation (42 females; 30 males).

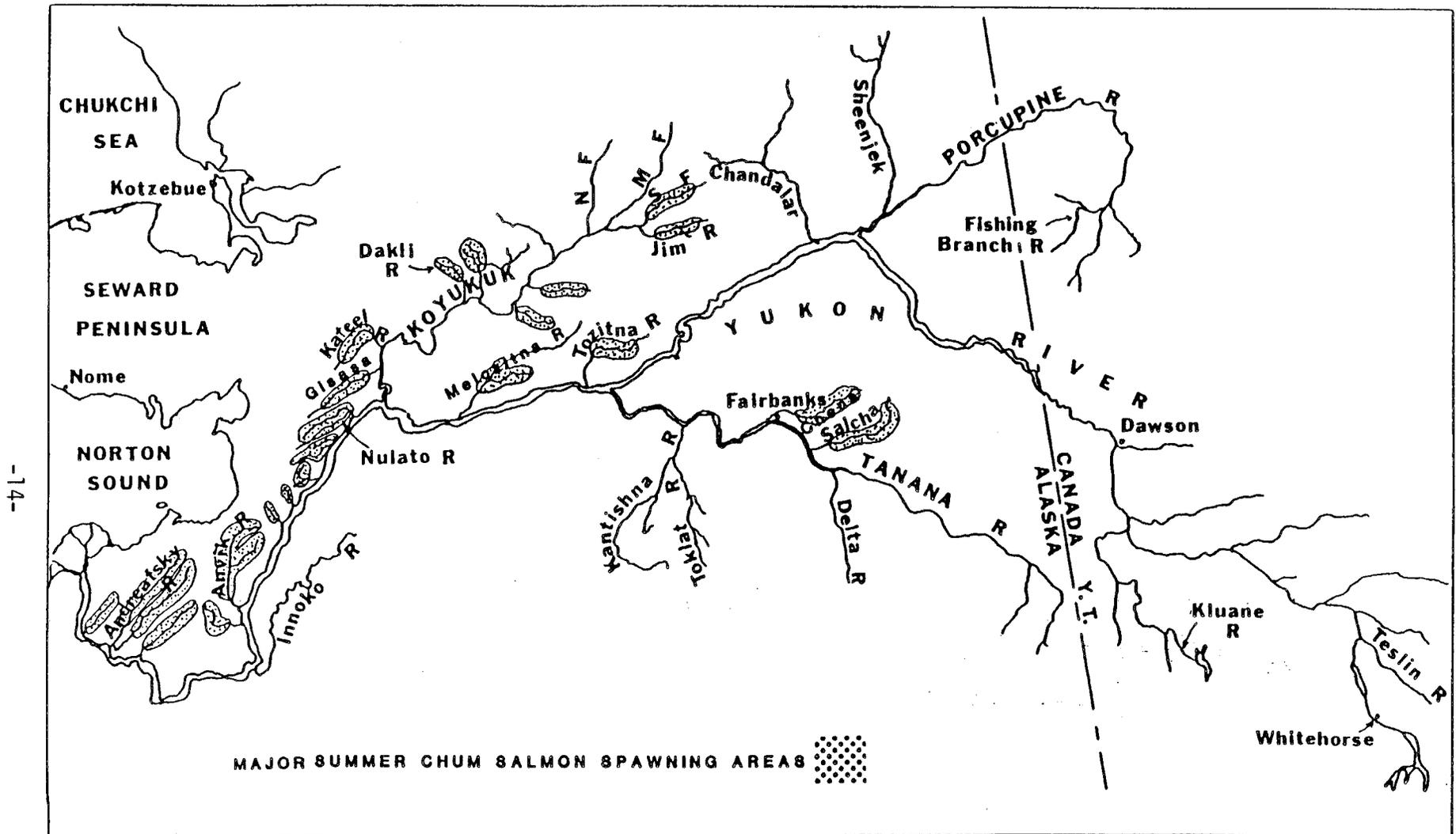


Figure 4. Summer chum salmon spawning areas in the Yukon River drainage.

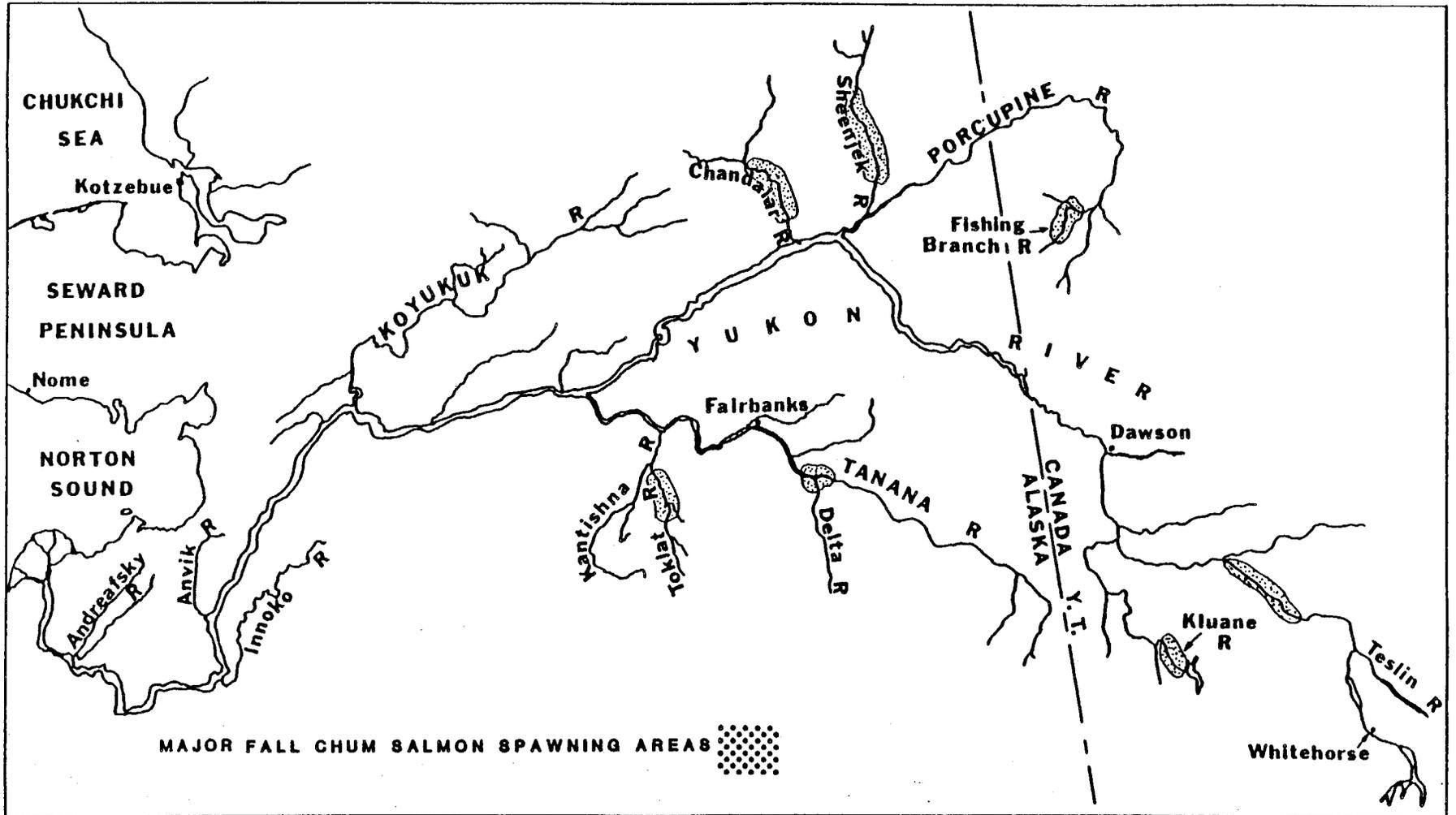


Figure 5. Fall chum salmon spawning areas in the Yukon River drainage.

Coho salmon spawn in widely scattered tributaries throughout the Yukon River drainage, although the major concentrations have been documented in the upper Tanana River drainage (Figure 6). Coho salmon escapement counts are generally obtained ancillary to fall chum salmon escapement survey priorities, and therefore, a comprehensive data base does not exist. Escapements were the highest on record for most index areas surveyed in 1984. The Delta Clearwater River, in the upper Tanana drainage, is the single most important coho salmon spawning stream, and had an escapement count of 11,061 coho salmon.

Age, Sex, and Length Composition

Age, sex, and length composition of Yukon River salmon catches and escapements in 1984 are presented separately for each species.

Chinook Salmon:

Age 6₂ chinook salmon were the dominant age class in 1984 Yukon River commercial catches (Table 4, Appendix Tables 9-16) as in most of the recent years. District 1 and 2 gillnet catches, which together comprised nearly 70% of the total river harvest, were made up of 58% and 53% age 6₂ fish, respectively. Age 5₂ chinook salmon were the next most abundant age class, comprising 24% and 32% of the respective District 1 and 2 catches.

There was little change in age structure during the first two sample periods in either District 1 or 2. However, the proportion of older fish decreased markedly while the proportion of younger fish increased for the third sample period in each district (small mesh season). Contribution of age 6₂ fish decreased from approximately 60% for the first sample period in Districts 1 and 2, to only 30% for the third period in each district. The contribution of age 5₂ fish in District 1 increased from about 19% to 46%, while it increased from 27% to 58% in District 2. The incidence of age 4₂ fish, likewise, increased in each district from 2% or less during the first two periods to 10% or more in the third period.

No samples were collected from fisheries in District 6 in 1984, and no attempt was made to apportion catches in this district. Commercial and subsistence harvests for this district comprised less than 7% of the total Yukon River chinook salmon harvest in 1984.

Subsistence gillnet and fishwheel harvests in Districts 1, 2, 3, and Canada were not sampled. Since these fisheries utilize the same gear types and occur concurrently with the commercial fisheries in these districts, harvests were apportioned by age and sex from the appropriate commercial catch samples (Appendix Tables 17-20). Because of significant intermixing of commercial and subsistence gillnet and fishwheel catches by fishermen in Districts 4 and 5, estimates for both gear types and fisheries were pooled and assumed to be self-weighting. These pooled estimates for Districts 4 and 5 (Appendix Tables 14 and 15) were similar to those for the other districts, comprised predominantly of age 6₂ fish (58% and 53% for Districts 4 and 5, respectively).

Size of chinook salmon in the District 1 commercial gillnet catch ranged from 563 mm for age 4₂ to 931 mm for age 7₂ males, and from 802 mm for age 5₂ to

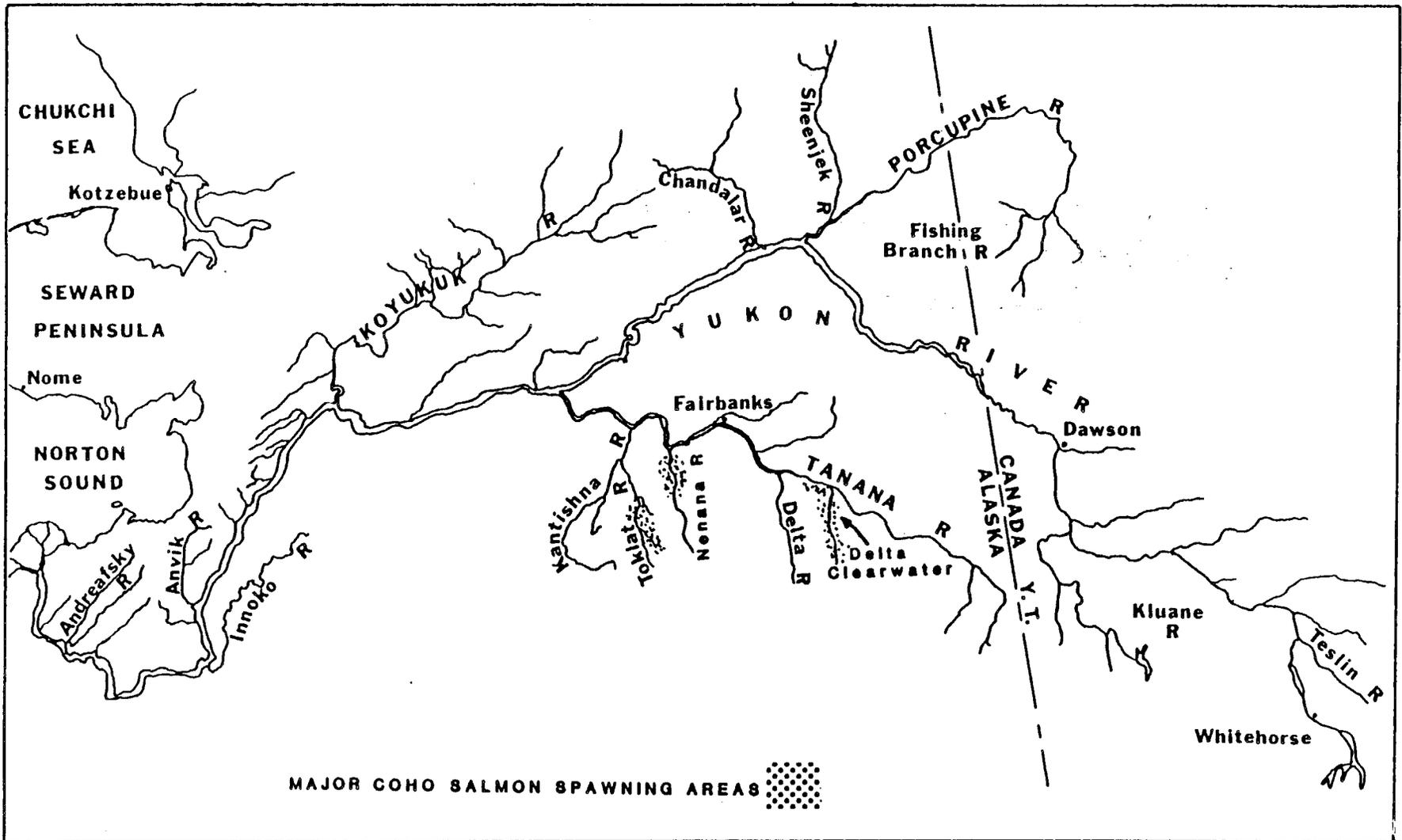


Figure 6. Coho salmon spawning areas in the Yukon River drainage.

Table 4. Total utilization of Yukon River chinook salmon by age, sex, and fishery, 1984.

District	Fishery	Sample Size	Sex	AGE GROUP								Total	
				42	52	53	62	63	72	73	83		
1	Commercial Gillnet	1,542	Males	2,121	14,279	67	17,238	200	3,113	1,084	0	38,102	
			Females	0	3,612	0	26,121	0	4,927	1,397	0	36,257	
			Combined	2,121	17,891	67	43,559	255 ¹	8,193 ¹	2,519 ¹	66 ¹	74,671	
	Subsistence Gillnet	2	Males	131	884	4	1,067	12	193	67	0	2,359	
			Females	0	224	0	1,630	0	305	87	0	2,245	
			Combined	131	1,108	4	2,697	16 ¹	507 ¹	156 ¹	4 ¹	4,624	
2	Commercial Gillnet	934	Males	1,034	10,698	0	7,049	0	1,414	411	0	20,605	
			Females	0	1,102	0	12,265	0	2,316	281	32	15,996	
			Combined	1,034	11,800	0	19,314	76 ¹	3,730	690	54 ¹	36,697	
	Subsistence Gillnet	3	Males	202	2,091	0	1,378	0	276	80	0	4,027	
			Females	0	215	0	2,397	0	453	55	6	3,126	
			Combined	202	2,306	0	3,775	15 ¹	729	135	11 ¹	7,172	
3	Commercial Gillnet	246	Males	37	692	0	791	0	124	12	12	1,668	
			Females	0	62	0	1,050	0	197	62	0	1,371	
			Combined	37	754	0	1,841	0	321	74	12	3,039	
	Subsistence Gillnet	4	Males	53	991	0	1,133	0	177	18	18	2,390	
			Females	0	89	0	1,505	0	283	89	0	1,965	
			Combined	53	1,080	0	2,638	0	460	106	18	4,355	
4	5	160	Males	161	1,830	0	1,345	0	54	161	0	3,552	
			Females	0	646	0	3,606	0	646	161	0	5,059	
			Combined	161	2,476	0	4,951	0	700	323	0	8,611	
5	5	189	Males	1,185	5,430	0	5,035	197	592	99	0	12,537	
			Females	0	99	0	4,837	0	1,185	0	0	6,121	
			Combined	1,185	5,528	0	9,872	197	1,777	99	0	18,658	
6	5		Males	-	-	-	-	-	-	-	-	-	
			Females	-	-	-	-	-	-	-	-	-	-
			Combined	-	-	-	-	-	-	-	-	-	4,466
Yukon Territory	Commercial Gillnet	629	Males	931	2,375	32	867	96	128	0	0	4,429	
			Females	32	64	0	4,076	0	1,220	64	0	5,456	
			Combined	963	2,439	32	4,943	96	1,348	64	0	9,885	
	Subsistence Gillnet	6	Males	580	1,480	20	540	60	80	0	0	2,760	
			Females	20	40	0	2,540	0	760	40	0	3,400	
			Combined	600	1,520	20	3,080	60	840	40	0	6,160	
TOTAL HARVEST			Males	6,435	40,750	123	36,443	566	6,151	1,932	30	92,430	
			Females	52	6,152	0	60,227	0	12,292	2,336	38	80,996	
			Combined	6,487	46,902	123	96,670	716 ¹	18,604 ¹	4,205 ¹	165 ¹	178,338 ⁷	

- ¹ Total for sexes combined greater than sum of individual sexes due to fish being sampled without sex identification.
- ² Allocation based on District 1 commercial catch samples.
- ³ Allocation based on District 2 commercial catch samples.
- ⁴ Allocation based on District 3 commercial catch samples.
- ⁵ Combined commercial and subsistence, gillnet, and fishwheel catches.
- ⁶ Allocation based on Yukon Territory commercial catch samples.
- ⁷ Total includes commercial and subsistence harvests in District 6 that are not apportioned by age and sex due to lack of sample data.

907 mm for age 7₂ females (Table 5).

In contrast to the relatively high abundance of age 6₂ fish in Yukon River harvests, age 5₂ fish comprised the largest segment of escapements to the Andraefsky, Anvik, and Chena Rivers (50%, 50%, and 48%, respectively). Sex compositions for the lower and middle Yukon River escapements were dominated by males, ranging from a high of 73% males for the Andraefsky River to a low of 58% males for the Salcha River.

Escapements in the Canadian portion of the drainage tended to be made up of more older fish and more females than escapements in the other regions (Table 6), which has also been observed in previous years. Age 6₂ fish were the most abundant age group, averaging about 58% of escapements to the two major upper Yukon River spawning tributaries, the Big Salmon and Nisutlin Rivers. The relative abundance of age 5₂ and 6₂ fish was about equal for the Little Salmon River (37% and 35%, respectively). As has been the case in recent years, the occurrence of fish with two freshwater annuli was much greater in upper Yukon River spawning streams than in other regions of the drainage.

Average size of male chinook salmon in Yukon River escapements ranged from 510 mm for age 4₂ fish from the Andraefsky River to 987 mm for age 6₂ fish from the Little Salmon River, while females ranged from 722 mm for age 5₂ fish from the Anvik River to 922 mm for age 7₂ fish from the Andraefsky River (Table 7).

Summer Chum Salmon:

Summer chum salmon were sampled from the District 1 and 2 commercial gillnet fisheries, and the District 4 and 6 commercial fishwheel fisheries in sufficient numbers to permit apportionment of harvest by age and sex. The District 3 harvest was apportioned by age and sex based on the composition of the District 2 sample, while Districts 4, 5, and 6 commercial gillnet harvests, and the District 5 commercial fishwheel harvest could not be apportioned due to the lack of appropriate sample data. Subsistence harvest for each district and gear type was apportioned by age and sex using the commercial catch sample data for that district and gear type. Summer chum salmon harvest by age, sex, and fishery for the entire drainage is presented in Table 8, while age and sex composition for each fishery is presented by sample period in Appendix Tables 22-31. Age, sex, and size composition of samples collected but not used to apportion catches is shown in Appendix Table 32.

Age 4₁ fish accounted for 73% of the commercial gillnet harvest and 74% of the commercial fishwheel harvest for all districts combined. Age 5₁ fish followed in importance, accounting for 25% and 22% of the gillnet and fishwheel harvests, respectively. Age 3₁ and 6₁ fish accounted for only 1% of the gillnet harvest, while they accounted for 4% and 0% of the fishwheel harvest, respectively. These results are similar to those of 1982 and 1983 in that age 4₁ fish were predominant. However, the age 4₁ component was even stronger in 1984 than it had been in either of the two previous years.

Temporal trends in age composition are not apparent for the District 1 commercial gillnet fishery. During each of the two previous years, age 5₁ declined in abundance while age 4₁ increased as the season progressed. Age

Table 5. Yukon River chinook salmon commercial and subsistence catch samples, length (mm) by age and sex, 1984¹.

District	Fishery	Sex		AGE GROUP								
				42	52	53	62	63	72	73	83	
1	Commercial 6" and 8-1/2" (15.2 cm and 21.6 cm)	Males	Mean	562.7	703.5	654	856.8	734	931.1	842.4		
			Std. Err.	10.17	4.9	4	6.13	36.38	17.03	9.37		
			Samp. Size	43	187	2	158	5	28	5		
	Gillnets	Females	Mean		802		872.3		906.6	825.5		
			Std. Err.		10.34		3.38		9.62	17.5		
			Samp. Size		35		227		36	8		
2	Commercial 6" and 8-1/2" (15.2 cm and 21.6 cm)	Males	Mean	560.9	707.5		847.2		938.7	879.2		
			Std. Err.	13.66	5.49		8.04		28.68	14.91		
			Samp. Size	27	177		76		19	6		
	Gillnets	Females	Mean		765.3		874.7		917.2	847.5	915	
			Std. Err.		14.91		4.58		6.13	27.12	0	
			Samp. Size		17		144		29	4	1	
3	Commercial 8-1/2" (21.6 cm)	Males	Mean	552.3	719.1		877		900.6	720	990	
			Std. Err.	23.85	8.72		9.11		45.04	0	0	
			Samp. Size	3	56		64		9	1	1	
	Gillnets	Females	Mean		828		868.6		914.1	854		
			Std. Err.		22		5.26		11.28	20.58		
			Samp. Size		5		85		16	5		
4	Gillnets ² Mesh size unknown	Males	Mean	496	723		874.3		833	802.3		
			Std. Err.	0	9.68		14.97		0	29.76		
			Samp. Size	1	29		23		1	3		
		Females	Mean		769.1		872		922.7	860.7		
			Std. Err.		20.3		6.05		10.89	13.17		
			Samp. Size		8		66		11	3		
	Fishwheel ²	Males	Mean	561.5	660		803					
			Std. Err.	28.5	46.6		54					
			Samp. Size	2	5		2					
		Females	Mean		710.8		902		889			
			Std. Err.		22.19		0		0			
			Samp. Size		4		1		1			
5	3	Males	Mean	550	696.9		872.6	712.5	942.5	970		
			Std. Err.	15.31	10.1		10.28	82.5	32.5	0		
			Samp. Size	11	54		51	2	6	1		
	Females	Mean		810		871.9		913.3				
		Std. Err.		0		6.14		8.26				
		Samp. Size		1		48		12				
Yukon Territory ⁴	Commercial 8-1/2" (21.6 cm)	Males	Mean	532.5	706.8	544	916.9	720.7	1027.5			
			Std. Err.	11.48	6.66	0	17.38	63.43	56.01			
			Samp. Size	29	74	1	27	3	4			
	Gillnets	Females	Mean	546	783.5		916.9		974.1	905		
			Std. Err.	0	73.5		5.24		10.13	2		
			Samp. Size	1	2		127		38	2		

¹ Length is mide-eye to fork-of-tail, except where noted.

² Combined commercial and subsistence.

³ Combined commercial and subsistence, gillnets of unknown mesh size and fishwheels.

⁴ Length reported is tip-of-snout to fork-of-tail.

Table 6. Yukon River chinook salmon escapement carcass samples, age and sex by spawning area, 1984.

River	Aerial Survey Estimate	Sample Size	Sex	Age Group										TOTAL
				32	42	52	62	63	72	73	82	83		
Andromafsky	4,466 ¹	420 ²	Males	0.2	12.6	46.2	13.8	0.0	0.5	0.0	0.0	0.0	0.0	73.3
			Females	0.0	0.0	3.6	21.9	0.0	1.2	0.0	0.0	0.0	0.0	26.7
			Combined Std. Err.	0.24	1.62	2.44	2.34	0.00	0.63	0.00	0.00	0.00	0.00	100.0
Arvik	641 ³	276 ⁴	Males	0.0	10.5	39.1	9.1	0.0	0.0	0.0	0.0	0.0	0.0	58.7
			Females	0.0	1.4	10.9	26.8	0.0	2.2	0.0	0.0	0.0	0.0	41.3
			Combined Std. Err.	0.00	1.96	3.02	2.89	0.00	0.88	0.00	0.00	0.00	0.00	100.0
Chena	501 ^{3/}	499	Males	0.0	11.6	38.3	6.0	0.2	1.8	0.2	0.0	0.0	58.1	
			Females	0.0	0.0	9.4	24.4	0.2	7.6	0.2	0.0	0.0	41.9	
			Combined Std. Err.	0.00	1.44	2.24	2.06	0.28	1.31	0.28	0.00	0.00	100.0	
Salcha	1,031 ³	515	Males	0.0	8.9	35.1	11.7	0.0	2.1	0.0	0.0	0.0	57.9	
			Females	0.0	0.0	3.5	29.1	0.0	8.9	0.4	0.2	0.0	42.1	
			Combined Std. Err.	0.00	1.26	2.15	2.17	0.00	1.38	0.27	0.19	0.00	100.0	
Big Salmon	1,044	154	Males	0.0	0.0	18.8	14.9	0.6	1.9	1.3	0.0	0.0	37.7	
			Females	0.0	0.0	2.6	42.9	0.0	15.6	1.3	0.0	0.0	62.3	
			Combined Std. Err.	0.00	0.00	3.32	3.99	0.65	3.07	1.29	0.00	0.00	100.0	
Little Salmon	434	105	Males	0.0	6.7	29.5	7.6	1.9	6.7	0.0	0.0	0.0	52.4	
			Females	0.0	0.0	7.6	27.6	0.0	12.4	0.0	0.0	0.0	47.6	
			Combined Std. Err.	0.00	2.45	4.74	4.68	1.34	3.85	0.00	0.00	0.00	100.0	
Nisutlin	1,178	216	Males	0.0	0.0	14.8	19.0	0.5	2.3	6.0	0.0	0.0	42.6	
			Females	0.0	0.0	1.9	38.9	0.5	4.2	11.6	0.0	0.5	57.4	
			Combined Std. Err.	0.00	0.00	2.54	3.37	0.65	1.68	2.60	0.00	0.46	100.0	
Tatchun	161 ⁵	23	Males	0.0	0.0	13.0	8.7	0.0	0.0	0.0	0.0	0.0	21.7	
			Females	0.0	0.0	4.3	56.5	0.0	17.4	0.0	0.0	0.0	78.3	
			Combined Std. Err.	0.00	0.00	8.08	10.15	0.00	8.08	0.00	0.00	0.00	100.0	

¹ Sonar estimate for East Fork = 2,473. Aerial survey for West Fork = 1,993.

² Carcass samples: East Fork = 237, West Fork = 118. Beach seine samples: East Fork = 65.

³ Incomplete or poor survey conditions resulting in a very minimal count.

⁴ Carcass samples = 275. Beach seine samples = 1.

⁵ Foot survey, Department of Fisheries and Oceans, Canada.

Table 7. Yukon River chinook salmon escapement carcass samples, length (mm) by age and sex, 1984.

River	Sex		AGE GROUP								
			32	42	52	62	63	72	73	82	83
Andreafsky ¹	Males	Mean	385	553.9	699.4	824.8		893.5			
		Std. Err.	0	9.34	4.59	9.56		51.5			
		Samp. Size	1	53	194	57		2			
	Females	Mean			762.4	856.7		922.6			
		Std. Err.			18.57	7.66		25.08			
		Samp. Size			15	92		5			
Anvik ²	Males	Mean		543.6	701.7	811.5					
		Std. Err.		10.46	5.27	14.08					
		Samp. Size		29	108	25					
	Females	Mean		542.3	722.2	865.4		877.8			
		Std. Err.		24.58	10.49	7.11		21.81			
		Samp. Size		4	30	74		6			
Chena	Males	Mean		509.8	693.7	871.7	695	950	845		
		Std. Err.		6.96	4.05	15.32	0	21.49	0		
		Samp. Size		58	190	29	1	9	1		
	Females	Mean			738.7	863	675	910.1	870		
		Std. Err.			11.1	7.97	0	6.79	0		
		Samp. Size			44	120	1	37	1		
Salcha	Males	Mean		524.7	693.1	878.2		944.1			
		Std. Err.		6.84	4.19	11.04		22.41			
		Samp. Size		46	180	60		11			
	Females	Mean			781.2	867.8		903.6	890	960	
		Std. Err.			21.53	4.58		8.45	40	0	
		Samp. Size			17	150		45	2	1	
Big Salmon	Males	Mean			696.9	878.6	570	941.7	855		
		Std. Err.			15.6	17.48	0	40.45	90		
		Samp. Size			28	23	1	3	2		
	Females	Mean			770	852.8		897.5	805		
		Std. Err.			50.62	5.11		8.32	35		
		Samp. Size			4	64		24	2		
Little Salmon	Males	Mean		561.4	712.5	851.3	710	986.7			
		Std. Err.		25.44	18.32	30.82	40	16.67			
		Samp. Size		7	28	8	2	6			
	Females	Mean			789.3	821.8		889.6			
		Std. Err.			34.75	7.25		12.97			
		Samp. Size			7	28		13			
Nisutlin	Males	Mean			688.5	835.3	795	936	865.4		
		Std. Err.			11.39	9.53	0	29.93	18.99		
		Samp. Size			30	39	1	5	12		
	Females	Mean			767.5	830.9	780	873.9	812.8		895
		Std. Err.			33.01	4.27	0	9.16	7.47		0
		Samp. Size			4	84	1	9	25		1
Tatchun	Males	Mean			725	810					
		Std. Err.			30.14	0					
		Samp. Size			3	1					
	Females	Mean			710	799.2		867.5			
		Std. Err.			0	13.35		14.22			
		Samp. Size			1	13		4			

¹ Carcass samples = 355. Beach seine samples = 65.

² Carcass samples = 275. Beach seine samples = 1.

Table 8. Total utilization of Yukon River summer chum salmon by age, sex, and fishery, 1984¹.

Fishery	Sample Size	Age 31			Age 41			Age 51			Age 61			Combined Ages		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
District 1																
Commercial Gillnet	1,709	3,066	1,600	4,666	125,956	85,438	211,394	38,729	35,206	73,935	1,645	1,036	2,681	169,396	123,280	292,676
Subsistence Gillnet	-	333	133	466	12,073	8,260	20,333	3,763	3,664	7,427	133	100	233	16,303	12,156	28,459
Total		3,399	1,733	5,132	138,029	93,698	231,727	42,492	38,870	81,362	1,778	1,136	2,914	185,699	135,436	321,135
District 2																
Commercial Gillnet	539	1,102	431	1,533	123,935	53,889	177,824	30,364	26,108	56,472	1,102	0	1,102	156,503	80,428	236,931
Subsistence Gillnet	-	100	100	200	12,271	6,912	19,183	4,408	3,105	7,513	100	0	100	16,879	10,117	26,996
Total		1,202	531	1,733	136,206	60,801	197,007	34,772	29,213	63,985	1,202	0	1,202	173,382	90,545	263,927
District 3																
Commercial Gillnet	-	3	6	9	421	309	730	215	130	345	3	0	3	642	445	1,087
Subsistence Gillnet	-	27	27	53	3,259	1,835	5,094	1,170	825	1,995	27	0	27	4,482	2,687	7,169
Total		30	33	62	3,680	2,144	5,824	1,385	955	2,340	30	0	30	5,124	3,132	8,256
District 4																
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34,041
Commercial Fishwheel	202	1,325	2,650	3,975	21,198	78,829	100,025	9,936	19,873	29,809	0	0	0	32,459	101,351	133,810
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,945
Subsistence Fishwheel	-	951	1,901	2,852	15,211	56,566	71,777	7,130	14,260	21,391	0	0	0	23,292	72,728	96,020
Total		2,276	4,551	6,827	36,409	135,395	171,803	17,066	34,133	51,200	0	0	0	55,751	174,079	280,816
District 5																
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235
Commercial Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	457
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,153
Subsistence Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28,382
Total		-	-	-	-	-	-	-	-	-	-	-	-	-	-	32,227
District 6																
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,138
Commercial Fishwheel	272	698	2,093	2,791	11,862	23,025	34,887	4,710	5,059	9,768	0	0	0	17,269	30,177	47,446
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,688
Subsistence Fishwheel	-	276	827	1,103	4,688	9,101	13,789	1,862	1,999	3,861	0	0	0	6,826	11,927	18,753
Total		974	2,920	3,894	16,550	32,126	48,676	6,572	7,058	13,629	0	0	0	24,095	42,104	80,025
Districts Combined																
Commercial Gillnet		4,171	2,037	6,208	250,312	139,636	389,948	69,308	61,444	130,752	2,750	1,036	3,786	326,541	204,153	574,108
Commercial Fishwheel		2,023	4,743	6,766	33,060	101,854	134,913	14,646	24,932	39,577	0	0	0	49,728	131,528	181,713
Subsistence Gillnet		460	260	719	27,603	17,007	44,610	9,341	7,594	16,935	260	100	360	37,664	24,960	87,410
Subsistence Fishwheel		1,227	2,728	3,955	19,899	65,667	85,566	8,992	16,259	25,252	0	0	0	30,118	84,655	143,155
Total		7,881	9,768	17,648	330,874	324,164	655,037	102,287	110,229	212,516	3,010	1,136	4,146	444,051	445,296	986,386

¹ Gillnet catches in Districts 4, 5, and 6, and fishwheel catches in District 5 are not apportioned by age and sex due to lack of adequate sample data. Therefore, row and column totals may include unapportioned catches.

4₁ predominated through all four sample periods in 1984. Too few samples were collected during the later part of the season in District 2 to permit an analysis of temporal trends in age composition for that district.

Males outnumbered females in the District 1 and 2 gillnet fisheries, while females were more abundant in the District 4 and 6 fishwheel fisheries. Females comprised 50% of total harvest for all districts and fisheries combined. This is very similar to the contribution of females in 1982 (50%) and 1983 (57%). Average size by age and sex group did not vary significantly between districts or gear types (Table 9).

The East Fork Andreafsky and Anvik Rivers were the only summer chum salmon escapements sampled in 1984 (Tables 10 and 11). Age 4₁ was predominant, comprising 70% and 87% of the sample at each location, respectively. Sex composition was 51% female for the East Fork Andreafsky River, 61% for the Anvik River. Size appeared to be greater for samples from the Anvik River for each age and sex group, although the differences are not significant in all cases.

Fall Chum Salmon:

Fall chum salmon were sampled from the District 1 and Yukon Territory commercial gillnet fisheries, and the District 4 and 5 commercial fishwheel fisheries in sufficient numbers to permit apportionment of harvest by age and sex. The District 2 and 3 harvests were apportioned by age and sex based on the composition of the District 1 sample, while District 6 commercial fishwheel harvest could not be apportioned due to the lack of appropriate sample data. Subsistence harvest for each district and gear type was apportioned by age and sex using the commercial catch sample data for that district and gear type. Fall chum salmon harvest by age, sex, and fishery for the entire drainage is presented in Table 12, while age and sex composition for each fishery is presented by sample period in Appendix Tables 33-44. Age, sex, and size composition of samples collected but not used to apportion catches is shown in Appendix Table 45.

Age 4₁ fish accounted for 57% of the commercial gillnet harvest and 54% of the commercial fishwheel harvest for all districts combined. Age 5₁ fish followed in importance, accounting for 36% and 40% of the gillnet and fishwheel harvests, respectively. Age 3₁ fish accounted for 7% and 6% of the gillnet and fishwheel harvests, respectively, while age 6₁ fish contributed less than 1% of the catch for each gear type. These results are similar to those of 1982, when age 4₁ accounted for 59% of the total catch for all districts and gear types combined. However, the age 4₁ component was substantially stronger in 1983, when it represented 88% of the gillnet harvest and 97% of the fishwheel harvest.

A sufficient number of samples were collected from the District 1 commercial gillnet fishery to permit stratification into two sample periods, but no differences are apparent in age or sex composition between the two periods (Appendix Table 33).

Table 9. Yukon River summer chum salmon commercial catch samples, length (mm) by age and sex, 1984¹.

Fishery	Sex		Age Group			
			31	41	51	61
District 1 8-1/2 in Gillnet (21.6 cm)	Male	Mean	546	581	618	638
		Std Error	5.8	1.3	3.6	11.7
		Sample Size	8	388	133	3
	Female	Mean	-	560	587	566
		Std Error	-	1.6	2.5	19.5
		Sample Size	0	223	89	2
District 1 6 in Gillnet (15.2 cm)	Male	Mean	553	579	610	613
		Std Error	6.0	1.4	3.5	14.8
		Sample Size	12	337	93	5
	Female	Mean	539	564	591	576
		Std Error	8.1	1.5	2.6	14.2
		Sample Size	8	272	131	4
District 2 8-1/2 in Gillnet (21.6 cm)	Male	Mean	540	593	627	590
		Std Error	0.0	2.4	4.2	0.0
		Sample Size	.1	139	71	1
	Female	Mean	538	561	600	-
		Std Error	22.5	2.6	4.2	-
		Sample Size	2	102	43	0
District 2 6 in Gillnet (15.2 cm)	Male	Mean	540	580	616	660
		Std Error	0.0	2.5	6.3	0.0
		Sample Size	1	103	17	1
	Female	Mean	-	573	588	-
		Std Error	-	3.6	6.1	-
		Sample Size	0	34	19	0
District 4 Fistwheel	Male	Mean	516	583	613	-
		Std Error	10.5	5.6	7.8	-
		Sample Size	2	32	15	0
	Female	Mean	552	551	596	-
		Std Error	12.9	2.2	5.2	-
		Sample Size	4	119	30	0
District 6 Fistwheel	Male	Mean	552	583	615	-
		Std Error	12.5	3.6	5.8	-
		Sample Size	4	68	27	0
	Female	Mean	531	565	589	-
		Std Error	5.6	2.1	5.3	-
		Sample Size	12	132	29	0

¹ Length measured from mid-orbit to fork-of-tail.

Table 10. East Fork Andraefsky River summer chum salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	1,122	23,141	9,818	491	34,572
PERCENT	1.6	33.0	14.0	0.7	49.3
AV LENGTH	547	570	606	601	-
STD ERROR	15.3	2.6	5.3	3.7	-
SAMP SIZE	7	149	63	3	222
FEMALES					
NUMBER	1,683	25,666	7,293	911	35,553
PERCENT	2.4	36.6	10.4	1.3	50.7
AV LENGTH	495	528	552	546	-
STD ERROR	6.8	2.1	4.6	17.4	-
SAMP SIZE	11	165	47	6	229
SEXES COMBINED					
NUMBER	2,805	48,807	17,111	1,402	70,125
PERCENT	4.0	69.6	24.4	2.0	100.0
STD ERROR	0.9	2.2	2.0	0.7	
SAMP SIZE	18	314	110	9	451

¹ Total sample composed of 338 beach seine samples (collected 6/25-7/25) and 113 carcass samples (collected 7/28-7/31). Escapement estimated by side-scan sonar and visual tower counts.

Table 11. Anvik River summer chum salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	5,346	294,930	48,116	0	348,392
PERCENT	0.6	33.1	5.4	0.0	39.1
AV LENGTH	575	584	610	-	-
STD ERROR	5.0	3.0	8.1	-	-
SAMP SIZE	2	117	19	0	138
FEMALES					
NUMBER	15,148	476,700	50,789	0	542,637
PERCENT	1.7	53.5	5.7	0.0	60.9
AV LENGTH	555	542	569	-	-
STD ERROR	14.0	1.9	5.8	-	-
SAMP SIZE	6	189	20	0	215
SEXES COMBINED					
NUMBER	20,494	771,630	98,905	0	891,029
PERCENT	2.3	86.6	11.1	0.0	100.0
STD ERROR	0.8	1.8	1.7	-	-
SAMP SIZE	8	306	39	0	353

¹ Samples collected by beach seine during period 6/28-7/27. Escapement estimated by side-scan sonar.

Table 12. Total utilization of Yukon River fall chum salmon by age, sex, and fishery, 1984¹.

Fishery	Sample Size	Age 31			Age 41			Age 51			Age 61			Combined Ages			
		M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	
District 1																	
Commercial Gillnet	1,211	2,196	3,596	5,792	16,026	30,532	46,558	11,120	14,898	26,018	298	85	383	29,640	49,111	78,751	
Subsistence Gillnet	-	301	455	756	1,871	3,324	5,195	1,240	1,658	2,898	29	7	37	3,441	5,444	8,885	
Total		2,497	4,051	6,548	17,897	33,856	51,753	12,360	16,556	28,916	327	92	420	33,081	54,555	87,636	
District 2																	
Commercial Gillnet	-	2,397	3,625	6,022	14,909	26,485	41,394	9,881	13,213	23,094	234	58	292	27,421	43,382	70,803	
Subsistence Gillnet	-	386	583	969	2,399	4,262	6,661	1,590	2,126	3,716	38	9	47	4,413	6,981	11,394	
Total		2,783	4,208	6,991	17,308	30,747	48,055	11,471	15,339	26,810	272	67	339	31,834	50,363	82,197	
District 3																	
Commercial Gillnet	-	218	329	547	1,354	2,405	3,759	897	1,200	2,097	21	5	27	2,490	3,939	6,429	
Subsistence Gillnet	-	70	106	176	437	776	1,213	289	387	676	7	2	9	803	1,271	2,074	
Total		288	435	723	1,791	3,181	4,972	1,186	1,587	2,773	28	7	36	3,293	5,210	8,503	
District 4																	
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,051	
Commercial Fishwheel	304	112	335	447	1,563	2,568	4,131	1,385	782	2,166	22	22	45	3,082	3,707	6,789	
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,115	
Subsistence Fishwheel	-	461	1,383	1,845	6,456	10,606	17,062	5,718	3,228	8,946	92	92	184	12,727	15,310	28,037	
Total		573	1,718	2,292	8,019	13,174	21,193	7,103	4,010	11,112	114	114	229	15,809	19,017	40,992	
District 5																	
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,890	
Commercial Fishwheel	167	576	461	1,036	5,181	4,836	10,016	4,375	3,799	8,174	0	0	0	10,132	9,095	19,227	
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,843	
Subsistence Fishwheel	-	2,652	2,122	4,774	23,872	22,280	46,152	20,158	17,506	37,664	0	0	0	46,682	41,908	88,590	
Total		3,228	2,583	5,810	29,053	27,116	56,168	24,533	21,305	45,838	0	0	0	56,814	51,003	122,550	
District 6																	
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	640	
Commercial Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,980	
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,273	
Subsistence Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,453	
Total		-	-	-	-	-	-	-	-	-	-	-	-	-	-	43,346	
Canada																	
Commercial Gillnet	220	417	104	521	5,316	4,482	9,798	6,775	5,629	12,404	0	208	208	12,508	10,423	22,931	
Subsistence Gillnet	-	113	28	142	1,444	1,218	2,662	1,841	1,529	3,370	0	57	57	3,398	2,832	6,230	
Total		530	132	663	6,760	5,700	12,460	8,616	7,158	15,774	0	265	265	15,906	13,255	29,161	
Districts Combined																	
Commercial Gillnet		5,228	7,654	12,882	37,605	63,904	101,509	28,673	34,940	63,613	553	356	910	72,059	106,855	187,495	
Commercial Fishwheel		688	796	1,483	6,744	7,404	14,147	5,760	4,581	10,340	22	22	45	13,214	12,802	45,996	
Subsistence Gillnet		870	1,172	2,043	6,151	9,580	15,731	4,960	5,700	10,660	74	75	150	12,055	16,528	43,814	
Subsistence Fishwheel		3,113	3,505	6,619	30,328	32,886	63,214	25,876	20,734	46,610	92	92	184	59,409	57,218	137,080	
Total		9,899	13,127	23,027	80,828	113,774	194,601	65,269	65,955	131,223	741	545	1,289	156,737	193,403	414,385	

¹ Gillnet catches in Districts 4, 5, and 6, and fishwheel catches in District 6 are not apportioned by age and sex due to lack of adequate sample data. Therefore, row and column totals may include unapportioned catches.

Females outnumbered males in the District 1 gillnet and District 4 fishwheel fisheries, while males were more abundant in the District 5 fishwheel and Yukon Territory gillnet fisheries. Females comprised 55% of total harvest for all districts and fisheries combined. This compared to 57% female in 1982 and 52% in 1983. Average size by age and sex group did not vary significantly between districts or gear types (Table 13).

Samples collected from test fishing fishwheels operated by the Department on the north and south banks of the Yukon River at Ruby indicate a distinct difference in age composition between stocks on the two banks (Appendix Table 45). Age 4₁ accounted for approximately 60% of the fall chum salmon sampled on each bank, but the north bank had relatively more age 5₁ fish (32%) and fewer age 3₁ fish (7%) than the south bank (18% and 21%, respectively). Sex composition was similar between the two samples. Similar results had been found for these sites in 1982, but not in 1983. A tagging study conducted from 1976 to 1978 indicated that there was a significant difference in bank orientation between fall chum salmon stocks in the Galena-Ruby area of the Yukon River (Buklis 1981). Fall chum salmon bound for the Porcupine and upper Yukon (Canadian) spawning areas migrated along the north bank, while those bound for the Tanana drainage migrated along the south bank of the Yukon River in the Galena-Ruby area. The differences in age compositions observed in both 1982 and 1984 appear to support these findings.

Escapement samples were collected from the Sheenjek River by beach seine, and from the Toklat, Delta, and Kluane Rivers by carcass survey in 1984 (Tables 14-17). Age 4₁ was predominant, accounting for between 76% and 83% of the total sample for each of these streams. The relative contribution of ages 3₁ and 5₁ for the Toklat, Delta, and Kluane Rivers support the differential age compositions of the north and south bank fishwheel samples taken at Ruby. The Kluane River sample (upper Yukon River drainage in Canada) was 19% age 5₁ and only 4% age 3₁. The Tanana drainage stocks, however, were more similar to the Ruby south bank sample, in that age 3₁ was relatively more abundant than age 5₁ (Toklat River: 16% age 3₁ and 7% age 5₁; Delta River: 10% age 3₁ and 6% age 5₁). Samples collected by beach seine from the Sheenjek River (Porcupine drainage) were not supportive of these age composition distinctions, with age 3₁ comprising 10% of the sample and age 5₁ 9%. Sex composition was only 39% female for the Sheenjek River sample, but was between 52% and 63% female for the other three escapements sampled. It is not known whether differences in age and sex composition between the Sheenjek River sample and the other escapement samples are due to the different methods of sample collection employed or to real differences among the populations.

Coho Salmon:

Coho salmon were sampled from the District 1 commercial gillnet fishery in sufficient numbers to permit apportionment of commercial and subsistence harvests in Districts 1, 2, and 3 by age and sex (Table 18). Age and sex composition for each district and fishery is presented by sample period in Appendix Tables 46-51, while samples collected at other locations but not used to apportion catches are presented in Appendix Table 52. Coho salmon commercial and subsistence harvests in Districts 4, 5, and 6 could not be apportioned by age and sex due to the lack of appropriate sample data.

Table 13. Yukon River fall chum salmon commercial catch samples, length (mm) by age and sex, 1984¹.

Fishery	Sex		Age Group			
			31	41	51	61
District 1 6 in Gillnet (15.2 cm)	Male	Mean	574	597	622	624
		Std Error	3.8	1.9	2.2	6.6
		Sample Size	41	255	169	4
	Female	Mean	563	580	603	611
		Std Error	2.2	1.2	1.8	0.0
		Sample Size	62	453	226	1
District 4 Fishwheel	Male	Mean	573	599	632	633
		Std Error	6.7	3.6	4.0	0.0
		Sample Size	5	70	62	1
	Female	Mean	548	565	600	601
		Std Error	4.6	2.9	4.6	0.0
		Sample Size	15	115	35	1
District 5 Fishwheel	Male	Mean	569	609	651	-
		Std Error	5.3	4.2	5.9	-
		Sample Size	5	45	38	0
	Female	Mean	569	586	621	-
		Std Error	5.2	4.6	3.8	-
		Sample Size	4	42	33	0
Yukon Territory 6 to 7 in Gillnet (15.2 to 17.8 cm)	Male	Mean ²	624	669	708	-
		Std Error	29.6	5.1	4.5	-
		Sample Size	4	51	65	0
	Female	Mean ²	570	643	663	668
		Std Error	0.0	5.2	4.2	5.5
		Sample Size	1	43	54	2

¹ Length measured from mid-orbit to fork-of-tail, unless noted otherwise.

² Length measured from tip-of-snout to fork-of-tail.

Table 14. Sheenjek River fall chum salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	1,861	11,756	1,607	0	15,224
PERCENT	7.4	46.8	6.4	0.0	60.6
AV LENGTH	563	614	621	-	-
STD ERROR	4.0	2.9	6.3	-	-
SAMP SIZE	22	139	19	0	180
FEMALES					
NUMBER	677	8,458	761	0	9,896
PERCENT	2.7	33.7	3.0	0.0	39.4
AV LENGTH	508	582	600	-	-
STD ERROR	16.2	2.8	10.8	-	-
SAMP SIZE	8	100	9	0	117
SEXES COMBINED					
NUMBER	2,537	20,214	2,368	0	25,120
PERCENT	10.1	80.5	9.4	0.0	100.0
STD ERROR	1.8	2.3	1.7	-	-
SAMP SIZE	30	239	28	0	297

¹ Samples collected by beach seine during period 9/12-9/24. Escapement estimated by side scan sonar.

Table 15. Toklat River fall chum salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	1,040	4,680	173	0	5,894
PERCENT	6.6	29.5	1.1	0.0	37.2
AV LENGTH	540	580	608	-	-
STD ERROR	7.0	3.1	27.5	-	-
SAMP SIZE	12	54	2	0	68
FEMALES					
NUMBER	1,560	7,540	867	0	9,967
PERCENT	9.8	47.5	5.5	0.0	62.8
AV LENGTH	517	558	590	-	-
STD ERROR	4.2	3.0	7.5	-	-
SAMP SIZE	18	87	10	0	115
SEXES COMBINED					
NUMBER	2,600	12,221	1,040	0	15,861
PERCENT	16.4	77.0	6.6	0.0	100.0
STD ERROR	2.7	3.1	1.8	-	-
SAMP SIZE	30	141	12	0	183

¹ Samples collected by carcass survey during period 10/25-10/26. Escapement estimated by aerial survey count.

Table 16. Delta River fall chum salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	690	4,741	431	0	5,862
PERCENT	5.6	38.5	3.5	0.0	47.6
AV LENGTH	569	584	628	-	-
STD ERROR	11.6	3.6	5.6	-	-
SAMP SIZE	8	55	5	0	68
FEMALES					
NUMBER	603	5,517	345	0	6,465
PERCENT	4.9	44.8	2.8	0.0	52.4
AV LENGTH	512	560	571	-	-
STD ERROR	6.4	3.2	13.6	-	-
SAMP SIZE	7	64	4	0	75
SEXES COMBINED					
NUMBER	1,293	10,258	776	0	12,327
PERCENT	10.5	83.2	6.3	0.0	100.0
STD ERROR	2.6	3.1	2.0	-	-
SAMP SIZE	15	119	9	0	143

¹ Samples collected by carcass survey during period 11/02-11/06. Escapement estimated by foot survey count.

Table 17. Klwane River fall chum salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP				
	31	41	51	61	TOTAL
MALES					
NUMBER	41	1,964	777	0	2,782
PERCENT	0.6	27.3	10.8	0.0	38.6
AV LENGTH	545	592	615	-	-
STD ERROR	0.0	3.9	5.0	-	-
SAMP SIZE	1	48	19	0	68
FEMALES					
NUMBER	286	3,518	614	0	4,418
PERCENT	4.0	48.9	8.5	0.0	61.4
AV LENGTH	545	565	594	-	-
STD ERROR	5.2	2.6	8.0	-	-
SAMP SIZE	7	86	15	0	108
SEXES COMBINED					
NUMBER	327	5,482	1,391	0	7,200
PERCENT	4.5	76.1	19.3	0.0	100.0
STD ERROR	1.6	3.2	3.0	-	-
SAMP SIZE	8	134	34	0	176

¹ Samples collected by carcass survey during period 10/16-10/18. Escapement estimated by aerial survey count.

Table 18. Total utilization of Yukon River coho salmon by age, sex, and fishery, 1984¹.

Fishery	Sample Size	Age 32			Age 43			Age 54			Combined Ages		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total
District 1													
Commercial Gillnet	619	1,944	1,923	3,867	11,362	10,747	22,109	1,906	1,590	3,496	15,212	14,260	29,472
Subsistence Gillnet	-	404	374	778	2,304	2,147	4,451	453	414	866	3,161	2,934	6,095
Total		2,348	2,297	4,645	13,666	12,894	26,560	2,359	2,004	4,362	18,373	17,194	35,567
District 2													
Commercial Gillnet	-	2,852	2,644	5,496	16,279	15,166	31,446	3,200	2,922	6,122	22,332	20,732	43,064
Subsistence Gillnet	-	468	434	902	2,671	2,489	5,160	525	479	1,005	3,664	3,402	7,066
Total		3,320	3,078	6,398	18,950	17,655	36,606	3,725	3,401	7,127	25,996	24,134	50,130
District 3													
Commercial Gillnet	-	41	38	79	235	219	453	46	42	88	322	299	621
Subsistence Gillnet	-	43	40	84	248	231	479	49	45	93	340	316	656
Total		84	78	163	483	450	932	95	87	181	662	615	1,277
District 4													
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	538
Commercial Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	557
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	287
Subsistence Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	2,580
Total		-	-	-	-	-	-	-	-	-	-	-	3,962
District 5													
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	1,747
Subsistence Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	15,720
Total		-	-	-	-	-	-	-	-	-	-	-	17,467
District 6													
Commercial Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	266
Commercial Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	7,422
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	1,479
Subsistence Fishwheel	-	-	-	-	-	-	-	-	-	-	-	-	13,306
Total		-	-	-	-	-	-	-	-	-	-	-	22,473
Yukon Territory													
Subsistence Gillnet	-	-	-	-	-	-	-	-	-	-	-	-	500
Districts Combined													
Commercial Gillnet		4,837	4,605	9,442	27,876	26,132	54,008	5,152	4,554	9,706	37,866	35,291	73,961
Commercial Fishwheel		-	-	-	-	-	-	-	-	-	-	-	7,979
Subsistence Gillnet		915	848	1,764	5,223	4,867	10,090	1,027	938	1,964	7,165	6,652	17,830
Subsistence Fishwheel		-	-	-	-	-	-	-	-	-	-	-	31,606
Total		5,752	5,453	11,206	33,099	30,999	64,098	6,179	5,492	11,670	45,031	41,943	131,376

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¹ Catches in Districts 4, 5, and 6, and in Yukon Territory, are not apportioned by age and sex due to lack of sample data. Therefore, row and column totals may include unapportioned catches.

Age 4₃ accounted for an estimated 74% of the commercial and subsistence harvests in Districts 1, 2, and 3, followed by ages 3₂ and 5₄ with 13% each. Females comprised 48% of the catch. Average lengths ranged from a low of 578 mm for age 3₂ males to 594 mm for age 5₄ females (Table 19). These results are similar to those of 1982 and 1983, except that the 4₃ age class was even more predominant in those years (87% in 1982, 92% in 1983). Sufficient coho salmon samples were collected in 1984 to permit stratification into two sample periods for the first time. Age 3₂ remained relatively unchanged between the two periods, while age 4₃ increased from 70% and age 5₄ decreased from 18% to 9% (Appendix Table 46).

Coho salmon escapement samples were collected from the Delta Clearwater River in 1984. Age 4₃ accounted for 75% of the escapement sample, age 5₄ 21%, and age 3₂ 4% (Table 20). Females made up 48% of the sample, similar to the sex composition of the catch sample. Average length was less for the escapement sample than for the catch sample in every age and sex group.

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Table 19. Yukon River coho salmon commercial catch samples, length (mm) by age and sex, 1984¹.

Fishery	Sex		Age Group		
			32	43	54
District 1 6 in Gillnet (15.2 cm)	Male	Mean	578	581	580
		Std Error	5.6	2.5	5.3
		Sample Size	41	234	46
	Female	Mean	581	582	594
		Std Error	3.7	1.8	3.2
		Sample Size	38	218	41

¹ Length measured from mid-orbit to fork-of-tail. One age 5₃ female with length 570 mm is not included in this summary.

Table 20. Delta Clearwater River coho salmon escapement, length (mm) by age and sex, 1984¹.

	AGE GROUP			
	32	43	54	TOTAL
MALES				
NUMBER	177	4,557	1,018	5,752
PERCENT	1.6	41.2	9.2	52.0
AV LENGTH	517	525	538	-
STD ERROR	22.7	3.9	8.1	-
SAMP SIZE	4	103	23	130
FEMALES				
NUMBER	265	3,761	1,283	5,309
PERCENT	2.4	34.0	11.6	48.0
AV LENGTH	534	536	541	-
STD ERROR	7.1	2.7	3.8	-
SAMP SIZE	6	85	29	120
SEXES COMBINED				
NUMBER	442	8,318	2,301	11,061
PERCENT	4.0	75.2	20.8	100.0
STD ERROR	6.5	3.2	5.7	
SAMP SIZE	10	188	52	250

¹ Samples collected by carcass survey during period 11/05-11/15. Escapement estimated by foot survey count.

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APPENDICES

Appendix Table 1. Yukon River District 1 salmon commercial catch by period, 1984¹.

Period Dates	Hours	No. of Fishermen	Chinook		Summer Chum		Fall Chum		Coho	
			Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE
6/18-6/19 ²	24	374	13,722	1.53	37,334	4.16				
6/21-6/22	24	409	18,760	1.91	35,556	3.62				
6/25-6/26	24	418	16,102	1.61	67,961	6.77				
6/28-6/29	24	419	16,517	1.64	23,928	2.38				
7/02-7/03 ³	24	361	5,053	0.58	56,584	6.53				
7/05-7/06	24	287	2,699	0.39	37,044	5.38				
7/09-7/10	24	316	1,101	0.15	23,107	3.05				
7/12-7/13	24	251	351	0.06	11,162	1.85				
7/16-7/17 ⁴	24	227	270	0.05			19,627	3.60	5	0.00
7/30-7/31	24	212	37	0.01			18,316	3.60	2,557	0.50
8/02-8/03	24	252	38	0.01			17,094	2.83	5,028	0.83
8/06-8/07	24	165	12	0.00			1,759	0.44	1,403	0.35
8/13-8/14	24	129	6	0.00			11,807	3.81	10,683	3.45
8/16-8/17	24	137	3	0.00			10,148	3.09	9,796	2.98
TOTAL			74,671⁵		292,676		78,751		29,472	

- ¹ All fish captured by set or drift gillnet. CPUE is number of fish per fisherman per hour.
- ² Chinook season (unrestricted mesh size) through 6/29.
- ³ Summer chum salmon (6 in [15.2 cm] maximum mesh size) through 7/13.
- ⁴ Fall chum salmon (6 in [15.2 cm] maximum mesh size) through 8/17.
- ⁵ Chinook harvest was 65,101 fish during unrestricted mesh season (6/18-6/29), and 9,570 fish during small mesh season (7/02-8/17).

Appendix Table 2. Yukon River District 2 salmon commercial catch by period, 1984¹.

Period Dates	Hours	No. of Fishermen	Chinook		Summer Chum		Fall Chum		Coho	
			Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE
6/20-6/21 ²	24	203	5,581	1.15	22,815	4.68				
6/24-6/25	24	210	14,356	2.85	31,739	6.30				
6/27-6/28	24	196	9,418	2.00	22,743	4.83				
7/01-7/02 ³	24	193	2,863	0.62	76,481	16.51				
7/04-7/05	24	132	1,592	0.50	28,579	9.02				
7/08-7/09	24	171	1,757	0.43	31,222	7.61				
7/11-7/12	24	157	682	0.18	14,550	3.86				
7/15-7/16	24	82	241	0.12	6,548	3.33				
7/18	6	50	55	0.18	2,254	7.51				
7/19 ⁴	18	93	108	0.06			9,091	5.43		
8/01	12	125	10	0.01			19,177	12.78	948	0.63
8/05	12	176	14	0.01			17,152	8.12	3,770	1.79
8/08	12	142	8	0.00			4,999	2.93	2,882	1.69
8/15	12	162	4	0.00			8,473	4.36	14,888	7.66
8/19	12	175	8	0.00			11,911	5.67	20,576	9.80
TOTAL			36,697⁵		236,931		70,803		43,064	

¹ All fish captured by set or drift gillnet. CPUE is number of fish per fisherman per hour.

² Chinook season (unrestricted mesh size) through 6/28.

³ Summer chum season (6 in [15.2 cm] maximum mesh size) through 7/18.

⁴ Fall chum season (6 in [15.2 cm] maximum mesh size) through 8/19.

⁵ Chinook harvest was 29,355 fish during unrestricted mesh season (6/20-6/28), and 7,342 fish during small mesh season (7/01-8/19).

Appendix Table 3. Yukon River District 3 salmon commercial catch by period, 1984¹.

Period Dates	Hours	No. of Fishermen	Chinook		Summer Chum		Fall Chum		Oho	
			Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE
6/28-6/29 ²	24	18	1,273	2.95	840	1.94				
7/02-7/03	24	18	1,763	4.08	247	0.57				
8/02-8/03 ³	24	6	2	0.01			2,191	15.22		
8/06-8/07	24	8	1	0.01			1,730	9.01	199	1.04
8/09-8/10	24	8					760	3.96	194	1.01
8/13-8/14	24	8					1,748	9.10	228	1.19
TOTAL			3,039⁴		1,087		6,429		621	

¹ All fish captured by set or drift gillnet. CPUE is number of fish per fisherman per hour.

² Chinook season (unrestricted mesh size) through 7/03.

³ Fall chum salmon (6 in [15.2 cm] maximum mesh size) through 8/14.

⁴ Chinook harvest was 3,036 fish during unrestricted mesh season (6/28-7/03), and 3 fish during small mesh season (8/02-8/14).

Appendix Table 4. Yukon River District 4 salmon commercial catch by period, 1984¹.

Period Dates	Hours	No. of Fishermen	Chinook		Summer Chum				Fall Chum				Coho		
			Fish	CPUE	Fish	Roe	Total	CPUE	Fish	Roe	Total	CPUE	Fish	CPUE	
6/15	18	0													
6/17-6/19	48	0													
6/20-6/22	48	8			51	2,566	2,617	6.81							
6/24-6/26	48	16	4	0.01	0	7,184	7,184	9.35							
6/27-6/29	48	27	125	0.10	1	10,988	10,989	8.48							
7/01-7/03	48	36	220	0.13	3	19,490	19,493	11.60							
7/04-7/06	48	36	106	0.06	9	28,625	28,634	17.04							
7/08-7/10	48	41	128	0.07	27	34,523	34,550	17.99							
7/11-7/13	48	48	161	0.07	163	31,107	31,270	13.86							
7/15-7/17	48	45	126	0.06	252	17,415	17,667	8.36							
7/18-7/20	48	40	72	0.04	106	8,682	8,788	4.69							
7/22-7/24	48	36	19	0.01	192	4,449	4,641	2.76							
7/25-7/27	48	23			205	1,616	1,821	1.72							
7/29-7/31	48	2			0	149	149	1.55							
8/01-8/03 ²	48	1			0	48	48	1.00							
8/05-8/07	48	0													
8/08-8/10	48	3							210	82	292	2.03			
8/12-8/14	48	10							813	337	1,150	2.66			
8/15-8/17	48	14							1,605	608	2,213	3.54	4	0.01	
8/19-8/21	48	15							1,015	296	1,311	1.95	20	0.03	
8/22-8/24	48	10							979	288	1,267	2.93	204	0.47	
8/26-8/28	48	11							1,277	241	1,518	3.16	318	0.66	
8/29-8/31	48	11							1,332	363	1,695	3.92	419	0.97	
9/02-9/04	48	2							394	0	394	8.21	130	2.71	
9/05-9/07	48	0													
TOTAL			961		1,009	166,842	167,851		7,625	2,215	9,840		1,095		

¹ Fish taken by set gillnet and fishwheel. CPUE is number of fish per fisherman per hour. Roe sales are in pounds, with the conversion factor of one pound roe equal to one chum salmon used to determine total chum salmon harvest in numbers of "equivalent fish".

² Subdistricts 4B and 4C only from 8/01 through 9/07.

Appendix Table 5. Yukon River District 5 salmon commercial catch by period, 1984¹.

Period Dates	Hours	No. of Fishermen	Chinook		Summer Chum				Fall Chum				Oho		
			Fish	CPUE	Fish	Roe	Total	CPUE	Fish	Roe	Total	CPUE	Fish	CPUE	
6/15-6/17	48	0													
6/19-6/21	48	0													
6/22-6/24	48	0													
6/26-6/28	48	0													
6/29-7/01	48	9	342	0.79											
7/03-7/05	48	15	753	1.05	7	26	33	0.05							
7/06-7/08	48	20	929	0.97	165	0	165	0.17							
7/10-7/12	48	26	1,261	1.01	468	21	489	0.39							
7/15-7/21 ²	168	1	120	0.71	0	0	0	0.00							
7/22-7/28 ²	168	1	127	0.76	5	0	5	0.03							
7/29-8/04 ²	168	1	97	0.58											
8/05-8/07 ²	72	1	40	0.56											
8/15-8/16	24	23							5,875	0	5,875	10.64			
8/18-8/19	24	29							6,193	0	6,193	8.90			
8/21-8/22	24	34							10,211	0	10,211	12.51			
9/07-9/11 ²	96	3							1,781	57	1,838	6.38			
TOTAL			3,669		645	47	692		24,060	57	24,117		0		

¹ Fish taken by set gillnet and fishwheel. CPUE is number of fish per fisherman per hour. Roe sales are in pounds, with the conversion factor of one pound roe equal to one chum salmon used to determine total chum salmon harvest in numbers of "equivalent fish".

² Subdistrict 5D only.

Appendix Table 6. Yukon River District 6 salmon commercial catch by period, 1984¹.

Period Dates	Hours	No. of Fishermen	Chinook		Summer Chum				Fall Chum				Coho		
			Fish	CPUE	Fish	Roe	Total	CPUE	Fish	Roe	Total	CPUE	Fish	CPUE	
6/15-6/17	48	0													
6/18-6/20	48	0													
6/22-6/24	48	0													
6/25-6/27	48	0													
6/29-7/01	48	0													
7/02-7/04	48	0													
7/06-7/08	48	4	66	0.34											
7/09-7/11	48	7	183	0.54	113	0	113	0.34							
7/13-7/15	48	18	115	0.13	3,036	0	3,036	3.51							
7/16-7/18	48	16	107	0.14	4,764	0	4,764	6.20							
7/20-7/22	48	17	70	0.09	7,652	183	7,835	9.60							
7/23-7/25	48	18	14	0.02	10,069	0	10,069	11.66							
7/27-7/29	48	17	12	0.01	5,603	0	5,603	6.87							
7/30-8/01	48	15	115	0.16	6,806	152	6,958	9.66							
8/03-8/05	48	19	165	0.18	7,614	0	7,614	8.35							
8/06-8/08	48	20	20	0.02	8,204	0	8,204	8.55							
8/10-8/12	48	13			2,388	0	2,388	3.83							
9/14-9/15	24	25							10,014	40	10,054	16.76	2,516	4.19	
9/16-9/17	24	23							7,715	16	7,731	14.01	4,490	8.13	
TOTAL			867		56,249	335	56,584		20,564²	56	20,620²		7,688³		

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¹ Fish taken by set gillnet and fishwheel. CPUE is number of fish per fisherman per hour. Roe sales are in pounds, with the conversion factor of one pound roe equal to one chum salmon used to determine total chum salmon harvest in numbers of "equivalent fish".

² Total includes sale of 2,835 fall chum salmon from Department test fishwheel catch between 8/17 and 9/11.

³ Total includes sale of 682 coho salmon from Department test fishwheel catch between 8/20 and 9/11.

Appendix Table 7. Yukon Territory, Canada, salmon commercial catch by period, 1984¹.

Period Dates	Chinook	Fall Chum
-07/08	15	
07/09-07/15	984	
07/16-07/22	2,224	
07/23-07/29	2,148	12
07/30-08/05	1,989	15
08/06-08/12	1,564	21
08/13-08/19	794	13
08/20-08/26	130	43
08/27-09/02	24	1,058
09/03-09/09	13	5,032
09/10-09/16		6,470
09/17-09/23		5,335
09/24-09/30		4,062
10/01-10/07		720
10/08-10/14		150
Total	9,885	22,931

¹ All fish taken by gillnet.

Appendix Table 8. Whitehorse fishway daily chinook salmon escapement counts, 1984.

Dates	Daily Counts			Cumulative	
	Males	Females	Total	Total	Percent
08/01	1	0	1	1	0.1
08/02	2	1	3	4	0.4
08/03	2	4	6	10	1.0
08/04	0	3	3	13	1.2
08/05	3	8	11	24	2.3
08/06	8	5	13	37	3.6
08/07	13	14	27	64	6.1
08/08	23	30	53	117	11.2
08/09	16	10	26	143	13.7
08/10	36	16	52	195	18.7
08/11	8	4	12	207	19.9
08/12	9	4	13	220	21.1
08/13	31	13	44	264	25.3
08/14	46	30	76	340	32.6
08/15	41	33	74	414	39.7
08/16	90	47	137	551	52.9
08/17	35	20	55	606	58.2
08/18	48	32	80	686	65.8
08/19	38	26	64	750	72.0
08/20	39	16	55	805	77.3
08/21	48	24	72	877	84.2
08/22	22	11	33	910	87.3
08/23	26	21	47	957	91.8
08/24	18	2	20	977	93.8
08/25	13	3	16	993	95.3
08/26	13	12	25	1,018	97.7
08/27	6	2	8	1,026	98.5
08/28	4	0	4	1,030	98.8
08/29	4	2	6	1,036	99.4
08/30	6	0	6	1,042	100.0
Total	649	393	1,042		

Appendix Table 9. Yukon River District 1 chinook salmon commercial gillnet catch, age, and sex by fishing period, 1984.

		Age Group								
		42	52	53	62	63	72	73	83	TOTAL
Period 1	6/18-6/19 ¹									
Sample Size	251									
Males	Catch	109	2,577	0	3,835	0	791	519	0	7,832
	Percent	0.8	18.8	0.0	27.9	0.0	5.8	3.8	0.0	57.1
Females	Catch	0	430	0	3,983	0	904	519	0	5,835
	Percent	0.0	3.1	0.0	29.0	0.0	6.6	3.8	0.0	42.5
Sexes Combined	Catch	109	3,007	0	7,818	55 ²	1,695	1,039	0	13,722
	Percent	0.8	21.9	0.0	57.0	0.4	12.4	7.6	0.0	100.0
	S.E. of Catch	76	356	0	426	54	283	227	0	
Period 2	6/21-6/22 ¹									
Sample Size	266									
Males	Catch	141	2,594	0	5,243	0	698	165	0	8,841
	Percent	0.8	13.8	0.0	27.9	0.0	3.7	0.9	0.0	47.1
Females	Catch	0	721	0	7,240	0	1,629	329	0	9,919
	Percent	0.0	3.8	0.0	38.6	0.0	8.7	1.8	0.0	52.9
Sexes Combined	Catch	141	3,315	0	12,483	0	2,327	494	0	18,760
	Percent	0.8	17.7	0.0	66.5	0.0	12.4	2.6	0.0	100.0
	S.E. of Catch	99	436	0	540	0	377	183	0	
Period 3	6/25-6/26 ¹									
Sample Size	270									
Males	Catch	179	2,554	0	2,831	60	384	268	0	6,276
	Percent	1.1	15.9	0.0	17.6	0.4	2.4	1.7	0.0	39.0
Females	Catch	0	1,561	0	6,652	0	1,345	268	0	9,826
	Percent	0.0	9.7	0.0	41.3	0.0	8.4	1.7	0.0	61.0
Sexes Combined	Catch	179	4,115	0	9,482	60	1,729	537	0	16,102
	Percent	1.1	25.6	0.0	58.9	0.4	10.7	3.3	0.0	100.0
	S.E. of Catch	102	425	0	479	59	301	175	0	
Period 4	6/28-6/29 ¹									
Sample Size	250									
Males	Catch	595	2,589	0	3,781	66	1,189	132	0	8,352
	Percent	3.6	15.7	0.0	22.9	0.4	7.2	0.8	0.0	50.6
Females	Catch	0	450	0	6,592	0	793	264	0	8,099
	Percent	0.0	2.7	0.0	39.9	0.0	4.8	1.6	0.0	49.0
Sexes Combined	Catch	595	3,039	0	10,373	66	1,982	396	66 ²	16,517
	Percent	3.6	18.4	0.0	62.8	0.4	12.0	2.4	0.4	100.0
	S.E. of Catch	194	403	0	502	66	338	159	66	
Period 5	7/02-7/03 ³									
Sample Size	205									
Males	Catch	592	2,147	0	753	74	0	0	0	3,566
	Percent	11.7	42.5	0.0	14.9	1.5	0.0	0.0	0.0	70.6
Females	Catch	0	219	0	1,046	0	222	0	0	1,487
	Percent	0.0	4.3	0.0	20.7	0.0	4.4	0.0	0.0	29.4
Sexes Combined	Catch	592	2,366	0	1,799	74	222	0	0	5,053
	Percent	11.7	46.8	0.0	35.6	1.5	4.4	0.0	0.0	100.0
	S.E. of Catch	111	173	0	166	42	71	0	0	

-Continued-

Appendix Table 9. Yukon River District 1 chinook salmon commercial gillnet catch, age, and sex by fishing period, 1984 (continued).

		Age Group								TOTAL
		42	52	53	62	63	72	73	83	
Period 6	7/05-7/06 ³									
Sample Size	211									
Males	Catch	205	1,128	0	524	0	0	0	0	1,857
	Percent	7.6	41.8	0.0	19.4	0.0	0.0	0.0	0.0	68.8
Females	Catch	0	125	0	524	0	0	0	0	650
	Percent	0.0	4.6	0.0	19.4	0.0	0.0	0.0	0.0	24.1
Sexes Combined	Catch	205	1,254	0	1,049	0	153 ²	38 ²	0	2,699
	Percent	7.6	46.4	0.0	38.9	0.0	5.7	1.4	0.0	100.0
	S.E. of Catch	47	89	0	87	0	41	21	0	
Period 7	7/09-7/10 ³									
Sample Size	65									
Males	Catch	152	455	0	177	0	51	0	0	835
	Percent	13.8	41.4	0.0	16.0	0.0	4.6	0.0	0.0	75.8
Females	Catch	0	19	0	196	0	34	17	0	266
	Percent	0.0	1.7	0.0	17.8	0.0	3.1	1.5	0.0	24.2
Sexes Combined	Catch	152	474	0	373	0	85	17	0	1,101
	Percent	13.8	43.1	0.0	33.8	0.0	7.7	1.5	0.0	100.0
	S.E. of Catch	46	66	0	63	0	36	16	0	
Period 8	7/12-7/13 ³									
Sample Size	13									
Males	Catch	81	135	0	27	0	0	0	0	243
	Percent	23.1	38.5	0.0	7.7	0.0	0.0	0.0	0.0	69.2
Females	Catch	0	54	0	54	0	0	0	0	108
	Percent	0.0	15.4	0.0	15.4	0.0	0.0	0.0	0.0	30.8
	S.E. of Catch	42	50	0	42	0	0	0	0	
Sexes Combined	Catch	81	189	0	81	0	0	0	0	351
	Percent	23.1	15.8	0.0	23.1	0.0	0.0	0.0	0.0	100.0
	S.E. of Catch	42	50	0	42	0	0	0	0	
Period 9-12	7/16-8/07 ⁴									
Sample Size	11									
Males	Catch	67	100	67	67	0	0	0	0	299
	Percent	18.2	27.3	18.2	18.2	0.0	0.0	0.0	0.0	81.8
Females	Catch	0	33	0	33	0	0	0	0	67
	Percent	0.0	9.1	0.0	9.1	0.0	0.0	0.0	0.0	18.2
Sexes Combined	Catch	67	133	67	100	0	0	0	0	366
	Percent	18.2	36.4	18.2	27.3	0.0	0.0	0.0	0.0	100.0
	S.E. of Catch	44	55	44	51	0	0	0	0	

¹ Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

² Fish sampled without sex information, totals for sexes combined greater than sum of individual sexes.

³ Summer chum salmon season, 6 in (15.2 cm) stretch mesh maximum.

⁴ Fall chum salmon season, 6 in (15.2 cm) stretch mesh maximum.

Appendix Table 10. Yukon River District 1 chinook salmon commercial gillnet catch, age, and sex by sample period, 1984.

		AGE GROUP								
		42	52	53	62	63	72	73	83	TOTAL
Sample Period 1 6/18-6/22 ¹										
Sample Size		517								
Males	Catch	250	5,171	0	9,078	0	1,489	684	0	16,672
	Percent	0.8	15.9	0.0	27.9	0.0	4.6	2.1	0.0	51.3
Females	Catch	0	1,151	0	11,223	0	2,533	848	0	15,755
	Percent	0.0	3.5	0.0	34.6	0.0	7.8	2.6	0.0	48.5
Sexes Combined	Catch	250	6,322	0	20,301	55 ²	4,022	1,532	0	32,482
	Percent	0.8	19.5	0.0	62.5	0.2	12.4	4.7	0.0	100.0
	S. E. of Catch	125	563	0	688	54	472	292	0	
Sample Period 2 6/25-6/29 ¹										
Sample Size		520								
Males	Catch	774	5,143	0	6,612	126	1,573	400	0	14,628
	Percent	2.4	15.8	0.0	20.3	0.4	4.8	1.2	0.0	44.8
Females	Catch	0	2,011	0	13,244	0	2,138	532	0	17,925
	Percent	0.0	6.2	0.0	40.6	0.0	6.6	1.6	0.0	55.0
Sexes Combined	Catch	774	7,154	0	19,856	126	3,711	932	66 ²	32,619
	Percent	2.4	21.9	0.0	60.9	0.4	11.4	2.9	0.2	100.0
	S. E. of Catch	219	585	0	694	88	453	236	66	
Sample Period 3 7/02-8/07 ³										
Sample Size		505								
Males	Catch	1,097	3,965	67	1,548	74	51	0	0	6,802
	Percent	11.5	41.4	0.7	16.2	0.8	0.5	0.0	0.0	71.1
Females	Catch	0	450	0	1,854	0	256	17	0	2,577
	Percent	0.0	4.7	0.0	19.4	0.0	2.7	0.2	0.0	28.9
Sexes Combined	Catch	1,097	4,415	67	3,402	74	460 ²	55 ²	0	9,570
	Percent	11.5	46.1	0.7	35.5	0.8	4.8	0.6	0.0	100.0
	S. E. of Catch	143	218	44	209	42	90	27	0	
SEASON TOTAL 6/18-8/07										
Total Sample		1,542								
Males	Catch	2,121	14,279	67	17,238	200	3,113	1,084	0	38,102
	Percent	2.8	19.1	0.1	23.1	0.3	4.2	1.5	0.0	51.0
Females	Catch	0	3,612	0	26,321	0	4,927	1,397	0	36,257
	Percent	0.0	4.8	0.0	35.2	0.0	6.6	1.9	0.0	48.6
Sexes Combined	Catch	2,121	17,891	67	43,559	255	8,193	2,519	66	74,671
	Percent	2.8	24.0	0.1	58.3	0.3	11.0	3.4	0.1	100.0
	S. E. of Catch	290	841	44	999	112	660	377	66	

¹ Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

² One fish sampled without sex information, total for sexes combined greater than sum of individual sexes.

³ Chum salmon season, 6 in (15.2 cm) stretch mesh maximum.

Appendix Table 11. Yukon River District 2 chinook salmon commercial gillnet catch, age, and sex by fishing period, 1984.

		Age Group							TOTAL
		42	52	62	63	72	73	83	
Period 1	6/20-6/21 ¹								
Sample Size	255								
Males	Catch	44	1,190	1,516	0	260	55	0	3,064
	Percent	0.8	21.3	27.2	0.0	4.7	1.0	0.0	54.9
Females	Catch	0	145	1,833	0	462	55	0	2,495
	Percent	0.0	2.6	32.8	0.0	8.3	1.0	0.0	44.7
Sexes Combined	Catch	44	1,335	3,349	0	722	109	22 ²	5,581
	Percent	0.8	23.9	60.0	0.0	12.9	2.0	0.4	100.0
	S.E. of Catch	30	146	168	0	115	47	21	
Period 2	6/24-6/25 ^{1,3}								
Sample Size	190								
Sexes Combined	Catch	151	4,005	8,236	76 ²	1,662	227	0	14,356
	Percent	1.0	27.9	57.4	0.5	11.6	1.6	0.0	100.0
	S.E. of Catch	106	465	513	75	332	129	0	
Period 3	6/27-6/28 ¹								
Sample Size	259								
Males	Catch	73	2,010	1,142	0	409	242	0	3,876
	Percent	0.8	21.3	12.1	0.0	4.3	2.6	0.0	41.2
Females	Catch	0	172	4,640	0	682	48	0	5,542
	Percent	0.0	1.8	49.3	0.0	7.2	0.5	0.0	58.8
Sexes Combined	Catch	73	2,182	5,782	0	1,091	291	0	9,418
	Percent	0.8	23.2	61.4	0.0	11.6	3.1	0.0	100.0
	S.E. of Catch	51	244	282	0	185	100	0	
Period 4	7/01-7/02 ⁴								
Sample Size	230								
Males	Catch	299	1,532	258	0	57	0	0	2,146
	Percent	10.4	53.5	9.0	0.0	2.0	0.0	0.0	74.9
Females	Catch	0	136	501	0	43	25	12	717
	Percent	0.0	4.8	17.5	0.0	1.5	0.9	0.4	25.1
Sexes Combined	Catch	299	1,668	759	0	100	25	12	2,863
	Percent	10.4	58.3	26.5	0.0	3.5	0.9	0.4	100.0
	S.E. of Catch	55	89	80	0	33	17	12	

¹ Chinook salmon season. No mesh size restrictions, most fish taken with 8-1/2 in (21.6 cm) mesh.

² Fish sampled without sex information, totals for sexes combined greater than sum of individual sexes.

³ No sex data obtained for this date.

⁴ Chum salmon season, 6 in (15.2 cm) stretch mesh maximum.

Appendix Table 12. Yukon River District 2 chinook salmon commercial gillnet catch, age, and sex by sample period, 1984.

		AGE GROUP							TOTAL
		42	52	62	63	72	73	83	
Sample Period 1 6/20-6/25 ¹									
Sample Size		445							
Males	Catch	195	4,760	5,244	0	859	169	0	11,226
	Percent	1.0	23.9	26.3	0.0	4.3	0.8	0.0	56.3
Females	Catch	0	580	6,341	0	1,525	169	0	8,615
	Percent	0.0	2.9	31.8	0.0	7.7	0.8	0.0	43.2
Sexes Combined	Catch	195	5,340	11,585	76 ²	2,384	336	22 ²	19,937
	Percent	1.0	26.8	58.1	0.4	12.0	1.7	0.1	100.0
	S. E. of Catch	110	488	540	75	351	138	21	
Sample Period 2 6/27-6/28 ¹									
Sample Size		259							
Males	Catch	73	2,010	1,142	0	409	242	0	3,876
	Percent	0.8	21.3	12.1	0.0	4.3	2.6	0.0	41.2
Females	Catch	0	172	4,640	0	682	48	0	5,542
	Percent	0.0	1.8	49.3	0.0	7.2	0.5	0.0	58.8
Sexes Combined	Catch	73	2,182	5,782	0	1,091	290	0	9,418
	Percent	0.8	23.2	61.4	0.0	11.6	3.1	0.0	100.0
	S. E. of Catch	51	244	282	0	185	100	0	
Sample Period 3 7/01-8/19 ³									
Sample Size		230							
Males	Catch	766	3,928	663	0	146	0	0	5,503
	Percent	10.4	53.5	9.0	0.0	2.0	0.0	0.0	75.0
Females	Catch	0	350	1,284	0	109	64	32	1,839
	Percent	0.0	4.8	17.5	0.0	1.5	0.9	0.4	25.0
Sexes Combined	Catch	766	4,278	1,947	0	255	64	32	7,342
	Percent	10.4	58.3	26.5	0.0	3.5	0.9	0.4	100.0
	S. E. of Catch	146	235	211	0	88	44	31	
SEASON TOTAL 6/20-8/19									
Total Sample		934							
Males	Catch	1,034	10,698	7,049	0	1,414	411	0	20,605
	Percent	2.8	29.2	19.2	0.0	3.9	1.1	0.0	56.1
Females	Catch	0	1,102	12,265	0	2,316	281	32	15,996
	Percent	0.0	3.0	33.4	0.0	6.3	0.8	0.1	43.6
Sexes Combined	Catch	1,034	11,800	19,314	76	3,730	690	54	36,697
	Percent	2.8	32.2	52.6	0.2	10.2	1.9	0.1	100.0
	S. E. of Catch	190	594	644	75	407	176	38	

¹ Chinook salmon season. No mesh size restrictions, most fish taken with 8-1/2 in (21.6 cm) mesh.

² One fish sampled without sex information, totals for sexes combined greater than sum of individual sex.

³ Chum salmon season, 6 in (15.2 cm) stretch mesh maximum, allocated based on samples obtained during fishing period 4.

Appendix Table 13. Yukon River District 3 chinook salmon commercial gillnet catch, age, and sex composition, 1984¹.

		AGE GROUP						TOTAL
		42	52	62	72	73	83	
Sample Period 6/29								
Sample Size 246								
Males	Catch	37	692	791	124	12	12	1,668
	Percent	1.2	22.8	26.0	4.1	0.4	0.4	54.9
Females	Catch	0	62	1,050	198	62	0	1,371
	Percent	0.0	2.0	34.6	6.5	2.0	0.0	45.1
Sexes Combined	Catch	37	754	1,841	321	74	12	3,039
	Percent	1.2	24.8	60.6	10.6	2.4	0.4	100.0
	S. E. of Catch	20	80	91	57	29	12	

¹ Allocation based on 8-1/2 in (21.6 cm) mesh gillnet samples from District 3 commercial catch.

Appendix Table 14. Yukon River District 4 chinook salmon catch, age, and sex composition, 1984¹.

		AGE GROUP					TOTAL
		42	52	62	72	73	
Sample Period	7/6-8/10						
Sample Size	160 ²						
Males	Catch	161	1,830	1,345	54	161	3,552
	Percent	1.9	21.3	15.6	0.6	1.9	41.3
Females	Catch	0	646	3,606	646	161	5,059
	Percent	0.0	7.5	41.9	7.5	1.9	58.8
Sexes Combined	Catch	161	2,476	4,951	700	323	8,611
	Percent	1.9	28.8	57.5	8.1	3.8	100.0
	S. E. of Catch	93	309	338	187	130	

¹ Pooled commercial and subsistence, gillnet and fishwheel catch. Allocated based on District 4 commercial and subsistence catch samples pooled, taken with various mesh size gillnets, up to 8-1/2 in (21.6 cm) maximum, and fishwheels near Galena.

² Commercial and subsistence fishwheel catch samples = 15.
 Commercial gillnet catch samples = 69.
 Subsistence gillnet catch samples = 76.

Appendix Table 15. Yukon River District 5 chinook salmon catch, age, and sex composition, 1984¹.

		AGE GROUP						TOTAL
		42	52	62	63	72	73	
Sample Period	7/18-7/22							
Sample Size	189							
Males	Catch	1,185	5,430	5,035	197	592	99	12,537
	Percent	6.3	29.1	27.0	1.1	3.2	0.5	67.2
Females	Catch	0	99	4,837	0	1,185	0	6,121
	Percent	0.0	0.5	25.9	0.0	6.3	0.0	32.8
Sexes Combined	Catch	1,185	5,528	9,872	197	1,777	99	18,658
	Percent	6.3	29.6	52.9	1.1	9.5	0.5	100.0
	S. E. of Catch	330	618	676	139	397	98	

¹ Pooled commercial and subsistence, gillnet, and fishwheel catch. Allocation based on District 5 subsistence catch samples pooled, taken with various mesh size gillnets, up to 8-1/2 in (21.6 cm) maximum, and fishwheels.

Appendix Table 16. Yukon Territory chinook salmon commercial catch, age, and sex composition, 1984¹.

Sex		AGE GROUP							TOTAL
		42	52	53	62	63	72	73	
	Sample Period	7/19-8/14							
	Sample Size	308							
Males	Catch	931	2,375	32	867	96	128	0	4,429
	Percent	9.4	24.0	0.3	8.8	1.0	1.3	0.0	44.8
Females	Catch	32	64	0	4,076	0	1,220	64	5,456
	Percent	0.3	0.6	0.0	41.2	0.0	12.3	0.6	55.2
Sexes Combined	Catch	963	2,439	32	4,943	96	1,348	64	9,885
	Percent	9.7	24.7	0.3	50.0	1.0	13.6	0.6	100.0
	S. E. of Catch	165	239	32	278	55	191	45	

¹ Allocation based on Yukon Territory commercial 8-1/2 in (21.6 cm) mesh gillnet catch samples.

Appendix Table 17. Yukon River District 1 chinook salmon subsistence catch, age, and sex composition, 1984¹.

		AGE GROUP								TOTAL
		42	52	53	62	63	72	73	83	
Males	Catch	131	884	4	1,067	12	193	67	0	2,359
	Percent	2.8	19.1	0.1	23.1	0.3	4.2	1.5	0.0	51.0
Females	Catch	0	224	0	1,630	0	305	87	0	2,245
	Percent	0.0	4.8	0.0	35.2	0.0	6.6	1.9	0.0	48.6
Sexes Combined	Catch	131	1,108	4	2,697	16 ²	507 ²	156 ²	4 ²	4,624
	Percent	2.8	24.0	0.1	58.3	0.3	11.0	3.4	0.1	100.0

¹ Allocation based on District 1 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gillnet samples.

² Fish sampled without sex information, total for sexes combined greater than sum of individual sexes.

Appendix Table 18. Yukon River District 2 chinook salmon subsistence catch, age, and sex composition, 1984¹.

		AGE GROUP							TOTAL
		42	52	62	63	72	73	83	
Males	Catch	202	2,091	1,378	0	276	80	0	4,027
	Percent	2.8	29.2	19.2	0.0	3.9	1.1	0.0	56.1
Females	Catch	0	215	2,397	0	453	55	6	3,126
	Percent	0.0	3.0	33.4	0.0	6.3	0.8	0.1	43.6
Sexes Combined	Catch	202	2,306	3,775	15 ²	729	135	11 ²	7,172
	Percent	2.8	32.2	52.6	0.2	10.2	1.9	0.1	100.0

¹ Allocation based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gillnet samples.

² Fish sampled without sex information, total for sexes combined greater than sum of individual sexes.

Appendix Figure 19. Yukon River District 3 chinook salmon subsistence catch, age, and sex composition, 1984¹.

		AGE GROUP						TOTAL
		42	52	62	72	73	83	
Males	Catch	53	991	1,133	177	18	18	2,390
	Percent	1.2	22.8	26.0	4.1	0.4	0.4	54.9
Females	Catch	0	89	1,505	283	89	0	1,965
	Percent	0.0	2.0	34.6	6.5	2.0	0.0	45.1
Sexes Combined	Catch	53	1,080	2,638	460	106	18	4,355
	Percent	1.2	24.8	60.6	10.6	2.4	0.4	100.0

¹ Allocation based on District 3 commercial 8-1/2 in (21.6 cm) mesh gillnet samples.

Appendix Table 20. Yukon Territory chinook salmon subsistence catch, age, and sex composition, 1984¹.

		AGE GROUP							TOTAL
		42	52	53	62	63	72	73	
Males	Catch	580	1,480	20	540	60	80	0	2,760
	Percent	9.4	24.0	0.3	8.8	1.0	1.3	0.0	44.8
Females	Catch	20	40	0	2,540	0	760	40	3,400
	Percent	0.3	0.6	0.0	41.2	0.0	12.3	0.6	55.2
Sexes Combined	Catch	600	1,520	20	3,080	60	840	40	6,160
	Percent	9.7	24.7	0.3	50.0	1.0	13.6	0.6	100.0

¹ Allocation based on Yukon Territory commercial 8-1/2 in (21.6 cm) mesh gillnet samples.

Appendix Table 21. Age, sex, and size of Yukon River chinook salmon catch samples collected in 1984, but not used to apportion harvest.

Location Gear Date	Sample Size	Sex		AGE GROUP							Total	
				32	42	52	53	62	63	72		73
Big Eddy ¹ 8-1/2 in (21.6 cm) Gillnets 6/8-7/3	262	Males	Mean	585.3	749.1			858.8		894.4	866.4	52.3
			Percent	2.3	16.4			29.8		1.9	1.9	
			Samp. Size	6	43			78		5	5	
		Females	Mean		887.3			876.1		879.7	879.5	47.7
			Percent		2.7			37.8		5.7	1.5	
			Samp. Size		7			99		15	4	
Combined	Percent	2.3	19.1			67.6		7.6	3.4	100.0		
Samp. Size	6	50			177		20	9				
Big Eddy ¹ 6 in (15.2 cm) Gillnets 7/19-8/18	9	Males	Mean		678.5			778		943		66.7
			Percent		44.4			11.1		11.1		
			Samp. Size		4			1		1		
		Females	Mean					816				33.3
			Percent					33.3				
			Samp. Size					3				
Combined	Percent		44.4			44.4		11.1		100.0		
Samp. Size			4			4		1				
Big Eddy ¹ 5-1/2 in (14 cm) Gillnets 6/8-7/9	25	Males	Mean	563.3	660.1	515				890		88.0
			Percent	24.0	56.0	4.0				4.0		
			Samp. Size	6	14	1				1		
		Females	Mean					906		921		12.0
			Percent					8.0		4.0		
			Samp. Size					2		1		
Combined	Percent	24.0	56.0	4.0	8.0			8.0		100.0		
Samp. Size	6	14	1	2				2				
Middle Mouth ¹ 8-1/2 in (21.6 cm) Gillnets 6/12-6/18	199	Males	Mean	568	694.5			873.7	649	925.3		67.3
			Percent	2.5	36.7			25.6	1.0	1.5		
			Samp. Size	5	73			51	2	3		
		Females	Mean		795			876.6	705	934.6	886.7	32.7
			Percent		2.0			26.1	0.5	2.5	1.5	
			Samp. Size		4			52	1	5	3	
Combined	Percent	2.5	38.7			51.8	1.5	4.0	1.5	100.0		
Samp. Size	5	77			103		3	8	3			
Stink Cr. ¹ Fishwheel 7/6-7/22	52	Males	Mean	334.5	516.6	684				832.5		80.8
			Percent	11.5	30.8	34.6				3.8		
			Samp. Size	6	16	18				2		
		Females	Mean	300		691.7				853.5	952	19.2
			Percent	1.9		5.8				7.7	3.8	
			Samp. Size	1		3				4	2	
Combined	Percent	13.5	30.8	40.4				11.5	3.9	100.0		
Samp. Size	7	16	21				6	2				
Fairbanks ² Fishwheel 7/25-8/7	7	Males	Mean			655						14.3
			Percent			14.3						
			Samp. Size			1						
		Females	Mean		842.5			826		879		85.7
			Percent		28.6			28.6		28.6		
			Samp. Size		2			2		2		
Combined	Percent		42.9			28.6		28.6		100.0		
Samp. Size		3				2		2				
Whitehorse Rapids ³ Fishway 8/30-9/5	52	Males	Mean		665.7			728.4	708		757.5	38.5
			Percent		17.3			15.4	1.9		3.8	
			Samp. Size		9			8	1		2	
		Females	Mean		723.3			728.4			748.8	61.5
			Percent		5.8			46.2			3.6	
			Samp. Size		3			24			5	
Combined	Percent		23.1			61.5	1.9		13.5	100.0		
Samp. Size		12				32	1		7			

- 1 Test fish samples.
- 2 Commercial catch samples.
- 3 Hatchery egg take samples.

Appendix Table 22. Yukon River District 1 summer chum salmon commercial gillnet catch, age, and sex by sample period, 1984.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period 1 6/19-6/22 ¹						
Sample Size 431						
Males	Catch	676	33,655	13,022	338	47,691
	Percent	0.9	46.2	17.9	0.5	65.4
Females	Catch	0	16,743	8,456	0	25,199
	Percent	0.0	23.0	11.6	0.0	34.6
Sexes Combined	Catch	676	50,397	21,478	338	72,890
	Percent	0.9	69.1	29.5	0.5	100.0
Sample Period 2 6/26-6/29 ¹						
Sample Size 415						
Males	Catch	886	41,848	12,399	221	55,355
	Percent	1.0	45.5	13.5	0.2	60.2
Females	Catch	0	27,456	8,635	443	36,534
	Percent	0.0	29.9	9.4	0.5	39.8
Sexes Combined	Catch	886	69,304	21,035	664	91,889
	Percent	1.0	75.4	22.9	0.7	100.0
Sample Period 3 7/03-7/06 ²						
Sample Size 431						
Males	Catch	869	37,364	9,341	1,086	48,660
	Percent	0.9	39.9	10.0	1.2	52.0
Females	Catch	1,521	30,847	12,165	434	44,968
	Percent	1.6	32.9	13.0	0.5	48.0
Sexes Combined	Catch	2,390	68,212	21,506	1,521	93,628
	Percent	2.6	72.9	23.0	1.6	100.0
Sample Period 4 7/10-7/13 ²						
Sample Size 432						
Males	Catch	635	13,089	3,966	0	17,690
	Percent	1.9	38.2	11.6	0.0	51.6
Females	Catch	79	10,392	5,949	159	16,579
	Percent	0.2	30.3	17.4	0.5	48.4
Sexes Combined	Catch	714	23,481	9,916	159	34,269
	Percent	2.1	68.5	28.9	0.5	100.0
Sample Periods Combined						
Sample Size 1709						
Males	Catch	3,066	125,956	38,729	1,645	169,396
	Percent	1.1	43.0	13.2	0.6	57.9
Females	Catch	1,600	85,438	35,206	1,036	123,280
	Percent	0.5	29.2	12.0	0.4	42.1
Sexes Combined	Catch	4,666	211,394	73,935	2,681	292,676
	Percent	1.6	72.2	25.3	0.9	100.0
	Std. Error	0.3	1.1	1.1	0.2	

¹ Allocation based on 8-1/2 in (21.6 cm) mesh gillnet samples from District 1 commercial catch.

² Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 23. Yukon River District 2 summer chum salmon commercial gill-net catch, age, and sex by sample period, 1984.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period 1 6/21-6/28 ¹						
Sample Size 359						
Males	Catch	215	29,928	15,287	215	45,646
	Percent	0.3	38.7	19.8	0.3	59.1
Females	Catch	431	21,962	9,258	0	31,651
	Percent	0.6	28.4	12.0	0.0	40.9
Sexes Combined	Catch	646	51,890	24,546	215	77,297
	Percent	0.8	67.1	31.8	0.3	100.0
Sample Period 2 7/02 ²						
Sample Size 180						
Males	Catch	887	94,007	15,077	887	110,857
	Percent	0.6	58.9	9.4	0.6	69.4
Females	Catch	0	31,927	16,850	0	48,777
	Percent	0.0	20.0	10.6	0.0	30.6
Sexes Combined	Catch	887	125,933	31,927	887	159,634
	Percent	0.6	78.9	20.0	0.6	100.0
Sample Periods Combined						
Sample Size 539						
Males	Catch	1,102	123,935	30,364	1,102	156,503
	Percent	0.5	52.3	12.8	0.5	66.1
Females	Catch	431	53,889	26,108	0	80,428
	Percent	0.2	22.7	11.0	0.0	33.9
Sexes Combined	Catch	1,533	177,824	56,472	1,102	236,931
	Percent	0.6	75.1	23.8	0.5	100.0
	Std. Error	0.4	2.2	2.2	0.4	

¹ Allocation based on 8-1/2 in (21.6 cm) mesh gillnet samples from District 2 commercial catch.

² Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 2 commercial catch.

Appendix Table 24. Yukon River District 3 summer chum salmon commercial gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period 1 6/21-6/28						
Sample Size		359				
Males	Catch	3	421	215	3	642
	Percent	0.3	38.7	19.8	0.3	59.1
Females	Catch	6	309	130	0	445
	Percent	0.6	28.4	12.0	0.0	40.9
Sexes Combined	Catch	9	730	345	3	1,087
	Percent	0.8	67.1	31.8	0.3	100.0

¹ Allocation based on 8-1/2 in (21.6 cm) mesh gillnet samples from District 2 commercial catch.

Appendix Table 25. Yukon River District 4 summer chum salmon commercial fishwheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/09-7/27					
Sample Size	202					
Males	Catch	1,325	21,198	9,936	0	32,459
	Percent	1.0	15.8	7.4	0.0	24.3
Females	Catch	2,650	78,829	19,873	0	101,351
	Percent	2.0	58.9	14.9	0.0	75.7
Sexes Combined	Catch	3,975	100,026	29,809	0	133,810
	Percent	3.0	74.8	22.3	0.0	100.0
	Std. Error	1.2	3.1	2.9	0.0	

¹ Allocation based on fishwheel samples from District 4 commercial catch.

Appendix Table 26. Yukon River District 6 summer chum salmon commercial fishwheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/24-8/08					
Sample Size	272					
Males	Catch	698	11,862	4,710	0	17,269
	Percent	1.5	25.0	9.9	0.0	36.4
Females	Catch	2,093	23,025	5,059	0	30,177
	Percent	4.4	48.5	10.7	0.0	63.6
Sexes Combined	Catch	2,791	34,887	9,768	0	47,446
	Percent	5.9	73.5	20.6	0.0	100.0
	Std. Error	1.4	2.7	2.5	0.0	

¹ Allocation based on fishwheel samples from District 6 commercial catch.

Appendix Table 27. Yukon River District 1 summer chum salmon subsistence gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	6/19-7/13					
Sample Size	1709					
Males	Catch	333	12,073	3,763	133	16,303
	Percent	1.2	42.4	13.2	0.5	57.3
Females	Catch	133	8,260	3,664	100	12,156
	Percent	0.5	29.0	12.9	0.4	42.7
Sexes Combined	Catch	466	20,333	7,427	233	28,459
	Percent	1.6	71.4	26.1	0.8	100.0

¹ Allocation based on 8-1/2 in (21.6 cm) and 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 28. Yukon River District 2 summer chum salmon subsistence gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	6/21-7/02					
Sample Size	539					
Males	Catch	100	12,271	4,408	100	16,879
	Percent	0.4	45.5	16.3	0.4	62.5
Females	Catch	100	6,912	3,105	0	10,117
	Percent	0.4	25.6	11.5	0.0	37.5
Sexes Combined	Catch	200	19,183	7,513	100	26,996
	Percent	0.7	71.1	27.8	0.4	100.0

¹ Allocation based on 8-1/2 in (21.6 cm) and 6 in (15.2 cm) mesh gillnet samples from District 2 commercial catch.

Appendix Table 29. Yukon River District 3 summer chum salmon subsistence gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	6/21-7/02					
Sample Size	539					
Males	Catch	27	3,259	1,170	27	4,482
	Percent	0.4	45.5	16.3	0.4	62.5
Females	Catch	27	1,835	825	0	2,687
	Percent	0.4	25.6	11.5	0.0	37.5
Sexes Combined	Catch	53	5,094	1,995	27	7,169
	Percent	0.7	71.1	27.8	0.4	100.0

¹ Allocation based on 8-1/2 in (21.6 cm) and 6 in (15.2 cm) mesh gillnet samples from District 2 commercial catch.

Appendix Table 30. Yukon River District 4 summer chum salmon subsistence fishwheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/09-7/27					
Sample Size	202					
Males	Catch	951	15,211	7,130	0	23,292
	Percent	1.0	15.8	7.4	0.0	24.3
Females	Catch	1,901	56,566	14,260	0	72,728
	Percent	2.0	58.9	14.9	0.0	75.7
Sexes Combined	Catch	2,852	71,777	21,391	0	96,020
	Percent	3.0	74.8	22.3	0.0	100.0

¹ Allocation based on fishwheel samples from District 4 commercial catch.

Appendix Table 31. Yukon River District 6 summer chum salmon subsistence fishwheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/24-8/08					
Sample Size	272					
Males	Catch	276	4,688	1,862	0	6,826
	Percent	1.5	25.0	9.9	0.0	36.4
Females	Catch	827	9,101	1,999	0	11,927
	Percent	4.4	48.5	10.7	0.0	63.6
Sexes Combined	Catch	1,103	13,789	3,861	0	18,753
	Percent	5.9	73.5	20.6	0.0	100.0

¹ Allocation based on fishwheel samples from District 6 commercial catch.

Appendix Table 32. Age, sex, and size of Yukon River summer chum salmon catch samples collected in 1984, but not used to apportion harvest.

Location Gear & Date	Sex	Total		Age 31			Age 41			Age 51			Age 61		
		N	%	N	%	Length	N	%	Length	N	%	Length	N	%	Length
Big Eddy (1)	Male	8	72.7	0	-	-	7	63.6	574	1	9.1	630	0	-	-
8-1/2" Gillnet	Female	3	27.3	0	-	-	2	18.2	538	1	9.1	644	0	-	-
6/13-7/02	Total	11	100.0	0	-	-	9	81.8		2	18.2		0	-	-
Big Eddy (1)	Male	261	48.6	4	0.7	579	198	36.9	583	58	10.8	605	1	0.2	625
5-1/2" Gillnet	Female	276	51.4	4	0.7	535	196	36.5	558	74	13.8	583	2	0.4	560
6/09-7/02	Total	537	100.0	8	1.4		394	73.4		132	24.6		3	0.6	
Middle Mouth (1)	Male	40	47.1	0	-	-	21	24.7	610	19	22.4	624	0	-	-
5-1/2" Gillnet	Female	45	52.9	0	-	-	28	32.9	573	17	20.0	580	0	-	-
6/13-6/17	Total	85	100.0	0	-	-	49	57.6		36	42.4		0	-	-
Stink Creek (2)	Male	168	36.4	1	0.2	518	143	31.0	568	23	5.0	608	1	0.2	622
Fishwheel	Female	294	63.6	15	3.2	517	258	55.8	535	21	4.5	571	0	-	-
6/29-7/23	Total	462	100.0	16	3.5		401	86.8		44	9.5		1	0.2	
Galena (3)	Male	7	70.0	0	-	-	1	10.0	618	6	60.0	657	0	-	-
Fishwheel	Female	3	30.0	0	-	-	1	10.0	581	2	20.0	660	0	-	-
8/06	Total	10	100.0	0	-	-	2	20.0		8	80.0		0	-	-
Galena (3)	Male	23	67.6	2	5.9	616	10	29.4	623	11	32.4	660	0	-	-
Gillnet	Female	11	32.4	0	-	-	5	14.7	571	6	17.6	619	0	-	-
7/16-8/06	Total	34	100.0	2	5.9		15	44.1		17	50.0		0	-	-

- (1) Test fishing project located in District 1 near Emmonak.
- (2) Test fishing project located in District 4 near Kaltag.
- (3) Subsistence catch sample located in District 4.

Appendix Table 33. Yukon River District 1 fall chum salmon commercial gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period 1 7/17-8/03						
Sample Size		645				
Males	Catch	939	10,495	7,936	256	19,626
	Percent	1.7	19.1	14.4	0.5	35.7
Females	Catch	1,963	22,697	10,666	85	35,411
	Percent	3.6	41.2	19.4	0.2	64.3
Sexes Combined	Catch	2,901	33,193	18,602	341	55,037
	Percent	5.3	60.3	33.8	0.6	100.0
Sample Period 2 8/07-8/17						
Sample Size		566				
Males	Catch	1,257	5,530	3,184	42	10,014
	Percent	5.3	23.3	13.4	0.2	42.2
Females	Catch	1,634	7,835	4,232	0	13,700
	Percent	6.9	33.0	17.8	0.0	57.8
Sexes Combined	Catch	2,891	13,365	7,416	42	23,714
	Percent	12.2	56.4	31.3	0.2	100.0
Sample Periods Combined						
Sample Size		1211				
Males	Catch	2,196	16,026	11,120	298	29,640
	Percent	2.8	20.3	14.1	0.4	37.6
Females	Catch	3,596	30,532	14,898	85	49,111
	Percent	4.6	38.8	18.9	0.1	62.4
Sexes Combined	Catch	5,792	46,558	26,018	383	78,751
	Percent	7.4	59.1	33.0	0.5	100.0
	Std. Error	0.7	1.5	1.4	0.2	

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 34. Yukon River District 2 fall chum salmon commercial gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period 1 7/17-8/17						
Sample Size		1211				
Males	Catch	2,397	14,909	9,881	234	27,421
	Percent	3.4	21.1	14.0	0.3	38.7
Females	Catch	3,625	26,485	13,213	58	43,382
	Percent	5.1	37.4	18.7	0.1	61.3
Sexes Combined	Catch	6,022	41,394	23,094	292	70,803
	Percent	8.5	58.5	32.6	0.4	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 35. Yukon River District 3 fall chum salmon commercial gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period 1 7/17-8/17						
Sample Size		1211				
Males	Catch	218	1,354	897	21	2,490
	Percent	3.4	21.1	14.0	0.3	38.7
Females	Catch	329	2,405	1,200	5	3,939
	Percent	5.1	37.4	18.7	0.1	61.3
Sexes Combined	Catch	547	3,759	2,097	27	6,429
	Percent	8.5	58.5	32.6	0.4	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 36. Yukon River District 4 fall chum salmon commercial fish-wheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	8/10-8/31					
Sample Size	304					
Males	Catch	112	1,563	1,385	22	3,082
	Percent	1.6	23.0	20.4	0.3	45.4
Females	Catch	335	2,568	782	22	3,707
	Percent	4.9	37.8	11.5	0.3	54.6
Sexes Combined	Catch	447	4,131	2,166	45	6,789
	Percent	6.6	60.9	31.9	0.7	100.0
	Std. Error	1.4	2.8	2.7	0.5	

¹ Allocation based on fishwheel samples from District 4 commercial catch.

Appendix Table 37. Yukon River District 5 fall chum salmon commercial fishwheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	8/17-9/12					
Sample Size	167					
Males	Catch	576	5,181	4,375	0	10,132
	Percent	3.0	26.9	22.8	0.0	52.7
Females	Catch	461	4,836	3,799	0	9,095
	Percent	2.4	25.1	19.8	0.0	47.3
Sexes Combined	Catch	1,036	10,016	8,174	0	19,227
	Percent	5.4	52.1	42.5	0.0	100.0
	Std. Error	1.8	3.9	3.8	0.0	

¹ Allocation based on fishwheel samples from District 5 commercial catch.

Appendix Table 38. Canadian Yukon River fall chum salmon commercial gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP				
		31	41	51	61	TOTAL
Sample Period	8/14-9/21					
Sample Size	220					
Males	Catch	417	5,316	6,775	0	12,508
	Percent	1.8	23.2	29.5	0.0	54.5
Females	Catch	104	4,482	5,629	208	10,423
	Percent	0.5	19.5	24.5	0.9	45.5
Sexes Combined	Catch	521	9,798	12,404	208	22,931
	Percent	2.3	42.7	54.1	0.9	100.0
	Std. Error	1.0	3.3	3.4	0.6	

¹ Allocation based on gillnet samples from Dawson area commercial catch. Mesh size reportedly used in this area is between 6 and 7 in (15.2 and 17.8 cm).

Appendix Table 39. Yukon River District 1 fall chum salmon subsistence gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/17-8/17					
Sample Size	1211					
Males	Catch	301	1,871	1,240	29	3,441
	Percent	3.4	21.1	14.0	0.3	38.7
Females	Catch	455	3,324	1,658	7	5,444
	Percent	5.1	37.4	18.7	0.1	61.3
Sexes Combined	Catch	756	5,195	2,898	37	8,885
	Percent	8.5	58.5	32.6	0.4	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 40. Yukon River District 2 fall chum salmon subsistence gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/17-8/17					
Sample Size	1211					
Males	Catch	386	2,399	1,590	38	4,413
	Percent	3.4	21.1	14.0	0.3	38.7
Females	Catch	583	4,262	2,126	9	6,981
	Percent	5.1	37.4	18.7	0.1	61.3
Sexes Combined	Catch	969	6,661	3,716	47	11,394
	Percent	8.5	58.5	32.6	0.4	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 41. Yukon River District 3 fall chum salmon subsistence gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	7/17-8/17					
Sample Size	1211					
Males	Catch	70	437	289	7	803
	Percent	3.4	21.1	14.0	0.3	38.7
Females	Catch	106	776	387	2	1,271
	Percent	5.1	37.4	18.7	0.1	61.3
Sexes Combined	Catch	176	1,213	676	9	2,074
	Percent	8.5	58.5	32.6	0.4	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

Appendix Table 42. Yukon River District 4 fall chum salmon subsistence fishwheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	8/10-8/31					
Sample Size	304					
Males	Catch	461	6,456	5,718	92	12,727
	Percent	1.6	23.0	20.4	0.3	45.4
Females	Catch	1,383	10,606	3,228	92	15,310
	Percent	4.9	37.8	11.5	0.3	54.6
Sexes Combined	Catch	1,845	17,062	8,946	184	28,037
	Percent	6.6	60.9	31.9	0.7	100.0

¹ Allocation based on fishwheel samples from District 4 commercial catch.

Appendix Table 43. Yukon River District 5 fall chum salmon subsistence fish-wheel catch, age, and sex by sample period, 1984¹.

		AGE GROUP				TOTAL
		31	41	51	61	
Sample Period	8/17-9/12					
Sample Size	167					
Males	Catch	2,652	23,872	20,158	0	46,682
	Percent	3.0	26.9	22.8	0.0	52.7
Females	Catch	2,122	22,280	17,506	0	41,908
	Percent	2.4	25.1	19.8	0.0	47.3
Sexes Combined	Catch	4,774	46,152	37,664	0	88,590
	Percent	5.4	52.1	42.5	0.0	100.0

¹ Allocation based on fishwheel samples from District 5 commercial catch.

Appendix Table 44. Canadian Yukon River fall chum salmon subsistence gill-net catch, age, and sex by sample period, 1984¹.

		AGE GROUP				
		31	41	51	61	TOTAL
Sample Period	8/14-9/21					
Sample Size	220					
Males	Catch	113	1,444	1,841	0	3,398
	Percent	1.8	23.2	29.5	0.0	54.5
Females	Catch	28	1,218	1,529	57	2,832
	Percent	0.5	19.5	24.5	0.9	45.5
Sexes Combined	Catch	142	2,662	3,370	57	6,230
	Percent	2.3	42.7	54.1	0.9	100.0

¹ Allocation based on gillnet samples from Dawson area commercial catch. Mesh size reportedly used in this area is between 6 and 7 in (15.2 and 17.8 cm).

Appendix Table 45. Age, sex, and size of Yukon River fall chum salmon catch samples collected in 1984, but not used to apportion harvest.

Location Gear & Date	Sex	Total		Age 31			Age 41			Age 51			Age 61		
		N	%	N	%	Length	N	%	Length	N	%	Length	N	%	Length
Big Eddy (1) 6" Gillnet 7/20-8/28	Male	178	43.6	10	2.5	591	88	21.6	607	80	19.6	632	0	-	-
	Female	230	56.4	16	3.9	576	120	29.4	594	94	23.0	615	0	-	-
	Total	408	100.0	26	6.4		208	51.0		174	42.6		0	-	-
Middle Mouth (1) 6" Gillnet 7/22-8/20	Male	149	42.6	12	3.4	585	76	21.7	606	61	17.4	628	0	-	-
	Female	201	57.4	18	5.1	577	119	34.0	593	64	18.3	609	0	-	-
	Total	350	100.0	30	8.6		195	55.7		125	35.7		0	-	-
Galena (2) Gillnet 8/14	Male	12	60.0	0	-	-	7	35.0	592	5	25.0	641	0	-	-
	Female	8	40.0	0	-	-	4	20.0	573	4	20.0	602	0	-	-
	Total	20	100.0	0	-	-	11	55.0		9	45.0		0	-	-
Galena (3) Gillnet 8/10-8/28	Male	47	52.2	2	2.2	555	31	34.4	592	14	15.6	624	0	-	-
	Female	43	47.8	0	-	-	32	35.6	590	11	12.2	605	0	-	-
	Total	90	100.0	2	2.2		63	70.0		25	27.8		0	-	-
Ruby NB (4) Fishwheel 8/10-9/05	Male	330	45.7	16	2.2	556	184	25.5	600	130	18.0	625	0	-	-
	Female	392	54.3	36	5.0	542	255	35.3	565	100	13.9	595	1	0.1	655
	Total	722	100.0	52	7.2		439	60.8		230	31.9		1	0.1	
Ruby SB (4) Fishwheel 8/12-9/18	Male	470	49.5	100	10.5	548	270	28.4	586	98	10.3	613	2	0.2	598
	Female	480	50.5	102	10.7	537	301	31.7	563	77	8.1	596	0	-	-
	Total	950	100.0	202	21.3		571	60.1		175	18.4		2	0.2	
Manley (5) Fishwheel 8/15-9/18	Male	171	48.4	13	3.7	539	112	31.7	587	46	13.0	618	0	-	-
	Female	182	51.6	18	5.1	525	135	38.2	570	29	8.2	613	0	-	-
	Total	353	100.0	31	8.8		247	70.0		75	21.2		0	-	-
Fairbanks (6) Fishwheel 9/15-9/17	Male	36	58.1	4	6.5	564	25	40.3	608	7	11.3	627	0	-	-
	Female	26	41.9	1	1.6	590	20	32.3	590	5	8.1	631	0	-	-
	Total	62	100.0	5	8.1		45	72.6		12	19.4		0	-	-

- (1) Test fishing project located in District 1 near Emmonak.
- (2) Commercial catch sample located in District 4.
- (3) Subsistence catch sample located in District 4.
- (4) Test fishing project located in District 4.
- (5) Test fishing project located in District 6.
- (6) Commercial catch sample located in District 6.

Appendix Table 46. Yukon River District 1 coho salmon commercial gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP			
		32	43	54	TOTAL
Sample Period 1 7/31-8/07					
Sample Size		360			
Males	Catch	600	3,297	799	4,696
	Percent	6.7	36.7	8.9	52.2
Females	Catch	500	2,998	799	4,297
	Percent	5.6	33.3	8.9 ²	47.8
Sexes Combined	Catch	1,099	6,295	1,599	8,993
	Percent	12.2	70.0	17.8	100.0
Sample Period 2 8/14-8/17					
Sample Size		259			
Males	Catch	1,344	8,065	1,107	10,516
	Percent	6.6	39.4	5.4	51.4
Females	Catch	1,423	7,749	791	9,963
	Percent	6.9	37.8	3.9	48.6
Sexes Combined	Catch	2,767	15,814	1,898	20,479
	Percent	13.5	77.2	9.3	100.0
Sample Periods Combined					
Sample Size		619			
Males	Catch	1,944	11,362	1,906	15,212
	Percent	6.6	38.6	6.5	51.6
Females	Catch	1,923	10,747	1,590	14,260
	Percent	6.5	36.4	5.4	48.4
Sexes Combined	Catch	3,867	22,109	3,496	29,472
	Percent	13.1	75.0	11.9	100.0
	Std. Error	1.6	2.0	1.4	

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

² One age 5₃ female is included with the age 5₄ sample.

Appendix Table 47. Yukon River District 2 coho salmon commercial gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP			TOTAL
		32	43	54	
Sample Period 1 7/31-8/17					
Sample Size		619			
Males	Catch	2,852	16,279	3,200	22,332
	Percent	6.6	37.8	7.4	51.9
Females	Catch	2,644	15,166	2,922	20,732
	Percent	6.1	35.2	6.8 ²	48.1
Sexes Combined	Catch	5,496	31,446	6,122	43,064
	Percent	12.8	73.0	14.2	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

² One age 5₃ female is included with the age 5₄ sample.

Appendix Table 48. Yukon River District 3 coho salmon commercial gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP			TOTAL
		32	43	54	
Sample Period 1 7/31-8/17					
Sample Size		619			
Males	Catch	41	235	46	322
	Percent	6.6	37.8	7.4	51.9
Females	Catch	38	219	42	299
	Percent	6.1	35.2	6.8 ²	48.1
Sexes Combined	Catch	79	453	88	621
	Percent	12.8	73.0	14.2	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

² One age 5₃ female is included with the age 5₄ sample.

Appendix Table 49. Yukon River District 1 coho salmon subsistence gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP			TOTAL
		32	43	54	
Sample Period	7/31-8/17				
Sample Size	619				
Males	Catch	404	2,304	453	3,161
	Percent	6.6	37.8	7.4	51.9
Females	Catch	374	2,147	414	2,934
	Percent	6.1	35.2	6.8 ²	48.1
Sexes Combined	Catch	778	4,451	866	6,095
	Percent	12.8	73.0	14.2	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

² One age 5₃ female is included with the age 5₄ sample.

Appendix Table 50. Yukon River District 2 coho salmon subsistence gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP			TOTAL
		32	43	54	
Sample Period	7/31-8/17				
Sample Size	619				
Males	Catch	468	2,671	525	3,664
	Percent	6.6	37.8	7.4	51.9
Females	Catch	434	2,489	479	3,402
	Percent	6.1	35.2	6.8 ²	48.1
Sexes Combined	Catch	902	5,160	1,005	7,066
	Percent	12.8	73.0	14.2	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

² One age 5₃ female is included with the age 5₄ sample.

Appendix Table 51. Yukon River District 3 coho salmon subsistence gillnet catch, age, and sex by sample period, 1984¹.

		AGE GROUP			TOTAL
		32	43	54	
Sample Period	7/31-8/17				
Sample Size	619				
Males	Catch	43	248	49	340
	Percent	6.6	37.8	7.4	51.9
Females	Catch	40	231	45	316
	Percent	6.1	35.2	6.8 ²	48.1
Sexes Combined	Catch	84	479	93	656
	Percent	12.8	73.0	14.2	100.0

¹ Allocation based on 6 in (15.2 cm) mesh gillnet samples from District 1 commercial catch.

² One age 5₃ female is included with the age 5₄ sample.

Appendix Table 52. Age, sex, and size of Yukon River coho salmon catch samples collected in 1984, but not used to apportion harvest.

Location Gear & Date	Sex	Total		Age 32			Age 43			Age 54		
		N	%	N	%	Length	N	%	Length	N	%	Length
Big Eddy (1) 6" Gillnet 7/27-8/28	Male	165	54.3	38	12.5	593	127	41.8	602	0	-	-
	Female	139	45.7	32	10.5	600	106	34.9	599	1	0.3	602
	Total	304	100.0	70	23.0		233	76.6		1	0.3	
Middle Mouth (1) 6" Gillnet 8/13-8/20	Male	79	51.6	12	7.8	597	66	43.1	597	1	0.7	610
	Female	74	48.4	9	5.9	582	62	40.5	588	3	2.0	593
	Total	153	100.0	21	13.7		128	83.7		4	2.6	
Ruby NB (2) Fishwheel 9/02-9/05	Male	17	63.0	4	14.8	600	13	48.1	542	0	-	-
	Female	10	37.0	2	7.4	612	6	22.2	558	2	7.4	555
	Total	27	100.0	6	22.2		19	70.4		2	7.4	
Ruby SB (2) Fishwheel 8/21-9/18	Male	202	55.6	25	6.9	549	148	40.8	549	29	8.0	570
	Female	161	44.4	19	5.2	562	110	30.3	554	32	8.8	571
	Total	363	100.0	44	12.1		258	71.1		61	16.8	
Manley (3) Fishwheel 9/04-9/18	Male	95	69.3	9	6.6	532	56	40.9	567	30	21.9	569
	Female	42	30.7	3	2.2	572	26	19.0	573	13	9.5	566
	Total	137	100.0	12	8.8		82	59.9		43	31.4	

- (1) Test fishing project located in District 1 near Emmonak.
(2) Test fishing project located in District 4.
(3) Test fishing project located in District 6.

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